Per-Olof Berggren

Presentation

Dr Per-Olof Berggren, Professor in Experimental Endocrinology and the director of the Rolf Luft Research Center for Diabetes and Endocrinology (RLC) at Karolinska Institutet (KI) is a world-leader within the field of experimental diabetes research and then specifically pancreatic islet cell function and survival. Over the years he has performed pioneering work regarding the fundamental mechanisms regulating the stimulus-response coupling in the endocrine pancreas with seminal contributions within the fields of insulin secreting pancreatic β-cell Ca2+ handling, phosphorylated inositol compounds and insulin receptor operated signaling. He early understood that a conceptually novel approach is needed to clarify pancreatic β-cell signal-transduction in health and disease in the living organism. He therefore developed a unique, elegant and versatile in vivo experimental platform using the anterior chamber of the eye as a transplantation site and the cornea as a natural body window for imaging, allowing non-invasive and longitudinal studies of pancreatic β -cell function and survival at single cell resolution. This not only represents a paradigm shift in pancreatic islet cell research but also provides a cure for diabetes. He discovered that a few islets in the eye successfully report on the status of the in situ endocrine pancreas, which may have major implications for the development of a personalized medicine readout approach. A groundbreaking observation was that human islets transplanted to the anterior chamber of the eye in mice can be used to evaluate long-term effects of novel anti-diabetic drugs. This is clinically important in the development of both novel therapeutical concepts in the treatment of diabetes and effective high potency predictive tests for islet cell function in transplantation. The ultimate goal using the anterior chamber of the eye as a clinical transplantation site for humans with diabetes has been reached, the first patient already being successfully transplanted.

The goal of Professor Berggren is to establish a Translational Medicine Center of Excellence for Diabetes within the framework of TecSalud in Monterrey capitalizing on the anterior chamber of the eye as a potential clinical transplantation site to treat/cure diabetes. In diabetes there is an unmet need to bridge high technological and novel/visionary science with clinical care of the patient which will create increased value for both science and patients as well as for pharmacological industry. Today's patients want treatment at clinics that are also associated with high class world leading research. Professor Berggren thinks that time is right to create a model center for regenerative diabetes medicine in Mexico, that if successful could pave the way for the establishment of many more centers in many places all over the world. At the moment he is looking for a logical infrastructure where such an initial model center can be placed. After visiting TecSalud in Monterrey, he believes that this could be an excellent fit. This would be a win-win situation where he will get access to an already well-functional clinical platform and TecSalud will be associated with world-leading, novel and visionary diabetes research. His visions for a Translational Medicine Research Center for Diabetes in Monterrey, based on his research/clinical work applying the anterior chamber of the eye technique, are the following:

1. Further develop and establish the in vivo anterior chamber of the eye imaging platform for basic research related to the physiology/pathology of the endocrine pancreas. This also means establishing the humanized mouse model as a new experimental animal model.

2. Develop the anterior chamber of the eye in vivo imaging technique in mice and pigs to study diabetes complications and possible prevention of these complications. This will be of major importance for translating this type of research to the diabetic patient in the clinic.
3. Develop the anterior chamber of the eye in vivo imaging technique in mice, rats and pigs as a tool for both identification of novel drugable targets and screening novel potential drugs for these targets. This will also involve the humanized mouse model, where human islets are transplanted into the anterior chamber of the eye of immunocompromised mice. In addition, it will involve the development of stem cells using the anterior chamber of the eye as a facilitating tool. This will be of immense interest for drug screening by the pharmaceutical industry.
4. Establish a state-of-the-art islet isolation facility for human islets.
5. Establish a state-of-the-art transplantation facility where human islets are transplanted into the anterior chamber of the eye of patients with both T1DM and T2DM as well as with pancreatitis. This also includes autologous transplantations into patients subjected to minimally invasive partial pancreatectomy or biopsies. In this context the islets in the eye will serve as reporters of the status of the in-situ islets in the pancreas. This will be a unique approach for a personalized medicine readout. This should also be of great interest to pharmaceutical industry.
6. Develop novel state-of-the-art technologies for evaluating the status of the islets in the anterior chamber of the eye as well as various highly controlled delivery systems for drugs to the anterior chamber of the eye; including contact lense based monitoring systems and nano-containers. These technologies will also serve as the basis for the development of self-monitoring systems for patients with diabetes and diabetes complications, both with and without islets transplanted into the anterior chamber of the eye.

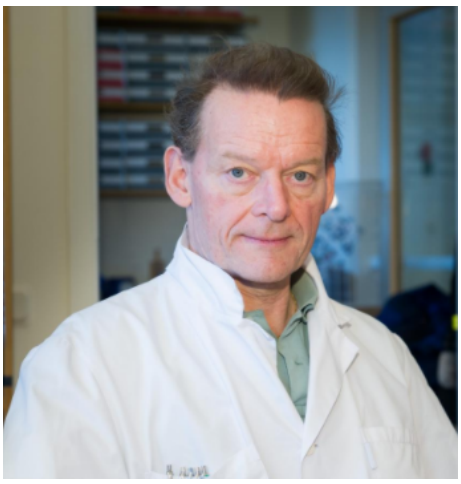
Due to the paradigm shifting research conducted by Per-Olof Berggren and his research group, RLC is considered to provide one of the strongest research environments at KI. The research activities of Per-Olof Berggren involve four major networks:

1. the Stockholm-laboratory at KI,
2. the Miami-laboratory at the Diabetes Research Institute, Miller School of Medicine, University of Miami, Miami, USA,
3. the POSTECH-laboratory in Pohang, South Korea and
4. the Singapore-laboratory at the Lee Kong Chian School of Medicine and the Nanyang Technological University in Singapore.

Per-Olof Berggren has also founded his own biotech company Biocrine. Hence, over the years he has created an internationally world-leading milieu for diabetes research. He is convinced that establishing a research operation within the framework of TecSalud will expand this unique research milieu and allow it to develop into a world-leading hub for next generation groundbreaking research at the interface between translational medicine and biotechnology within the diabetes field. This hub will serve as a think tank and melting pot that will attract and foster young scientists from all over the world within the research fields of medicine, biology, chemistry, bioengineering, nano/microtechnology including microelectronics and optics. This will not only guarantee the successful training of the coming generation of diabetes researchers and clinicians but also the development of entrepreneurial skills necessary for the commercialization

of novel research findings. Finally, this will enable the establishment of a novel concept in diabetes research and clinic where regenerative medicine meets frontier technology and pharmaceutical industry at TecSalud. This novel concept will lay the foundation for state-of-the-art personalized treatment strategies for patients with diabetes and diabetes complications.

Curriculum Vitae



Name: Yngve, Per-Olof Berggren, PhD, Professor in Experimental Endocrinology

Address: Department of Molecular Medicine and Surgery, Karolinska Institutet, Karolinska University Hospital, SE-171 76 Stockholm, Sweden

Telephone: (46) 8 517 75731, (46) 8 517 72197, (46) 70 729 5731

E-mail: Per-Olof.Berggren@ki.se

Civil status: Married

Secondary school: Graduated May 1974, Kristianstad, Sweden

Orcid: https://orcid.org/0000-0001-8991-413X

University studies:

- Medical school 1974-1976 at Umeå University.
- Full time research 1977-1982 at Uppsala University.
- Medical School 1982-1983 at Uppsala University.
- 1984- full time research.
- PhD in Medical Cell Biology 1982 at Uppsala University.
- Appointed Associate professor in Medical Cell Biology 1985 at Uppsala University.

Military service: 1976 and 1982 (medical officer)

Present position

- Professor and Head Cell Biology and Experimental Endocrinology, Department of Molecular Medicine and Surgery, Director The Rolf Luft Research Center for Diabetes and Endocrinology, Karolinska Institutet, Stockholm, Sweden since 1997.
- Visiting Research Professor, Mary Lou Held Professor of Diabetes Research, Diabetes Research Institute, University of Miami Miller School of Medicine, Miami, FL, USA since 2002.
- Visiting Professor, Division of Integrative Biosciences and Biotechnology, University of Science and Technology, Pohang, South Korea since 2010.
- Visiting Professor, Lee Kong Chian School of Medicine/Nanyang Technological University, Singapore since 2012.
- Senior Consultant, Singapore Eye Research Institute, Singapore since 2013.
- Distinguished Professor at the University of Rome Tor Vergata, Italy since 2016.
- Visiting Professor, West China Hospital of Sichuan University Chengdu, China since 2019. Visiting Professor, University of Ulster, Coleraine, Northern Ireland since 2020.

Activities in professional organizations

- Member of the Korean Academy of Science and Technology since 2018.
- Member of the American Academy of Arts and Sciences since 2017.
- Member of the National Academy of Medicine (USA) since 2016.
- Member of EMBO since 2014.
- Member of Stockholm-Uppsala Life Science Ambassador Program since 2010.
- Member of the review committee for The Wenner-Gren Foundations since 2009.
- Member of Academia Europaea since 2009.
- Member of Roche SAB in Metabolism 2007-2008.
- Member of Physiological Sciences Funding Committee, Wellcome Trust 2008-2009.
- Member of the Royal Swedish Academy of Sciences Class VII since 2008.
- Ad hoc member of the Nobel Committee, Karolinska Institutet 2007-2012 and 2014.
- Member of the Nobel Assembly at Karolinska Institutet since 1999.
- Member of Metabolism Study Section, NIH, 2001.
- Member of the Science review committee for the Swedish Diabetes Association 1998-2002.
- Member of Medical Science Review Committee of the Juvenile Diabetes Foundation International, New York, USA 1992-2001.

Activities in editorial boards

- Member Editorial Board of Diabetes & Metabolism Journal since 2017.
- Member Editorial Board of CELLR4 since 2013.
- Member Editorial Board of Diabetes & Metabolism Journal 2013-2017.
- Member Editorial Board of Molecular Metabolism 2013-2017.
- Member Editorial Board of Metabolism, Clinical and Experimental since 2011.
- Member Editorial Board of Interdisciplinary Bio Central (IBC) since 2009.
- Member Editorial Board of Cell Metabolism since 2005.
- Member Editorial Board of American Journal of Physiology: Endocrinology and Metabolism, 2001-2007.
- Member Editorial Board of Diabetes 2000-2002 and 2012-2014.

Academic appointments

- 2013 - 2017: Adjunct Professor, Department of Microbiology and Immunology, Seoul National University College of Medicine, South Korea 2013-03-01—2017-02-28.
- 2013 - 2015: Adjunct Professor at the Division of Molecular and Life Sciences, Pohang University of Science and Technology, Pohang, Korea 2013-03-01 - 2015-02-28.
- 2008 - 2010: Visiting Professor at The University of Oxford, The John Radcliffe, Headington, Oxford, U.K. 2008-06-01 - 2010-05-31.
- 2005: Visiting Professor at École Polythechnique, Fédérale de Lausanne, Lausanne, Switzerland 2005-04-01 - 12-31.
- 1997: Professor in Cell Physiology, specifically Experimental Diabetes Research, Lund University, Lund, Sweden 1997-01-01 - 06-30.
- 1990 - 1996: Researcher in Clinical Diabetology, the Swedish Medical Research Council.
- 1984 - 1990: "Research Assistant in Medical Cell Biology", Dept of Medical Cell Biology,

University of Uppsala, Uppsala, Sweden 1984-03-01 - 1990-02-28.

- 1982 - 1987: "Line coordinator for human biology line, 80 points" (coordinator for human biology) Medical Faculty, University of Uppsala, Uppsala, Sweden 1982 - 1987.
- 1982: ”Vik research assistant” (Acting Assistant Professor), Dept of Medical Cell Biology, University of Uppsala, Uppsala, Sweden 1982-06-01 - 09-31.
- 1983: ”Vik Universitetslektor” (Senior Lecturer), Dept of Medical Cell Biology, University of Uppsala, Uppsala, Sweden 1983-04-01 - 06-30.
- 1982: ”Vik universitetslektor” (Senior Lecturer), Dept of Medical Cell Biology, University of Uppsala, Uppsala, Sweden 1982-02-01 - 03-31.
- 1981: "Acting Assistant Professor", Dept of Medical Cell Biology, University of Uppsala, Uppsala, Sweden 1982-01-01 - 31.
- 1978: "Course assistant for the course in histology and cell biology", (Course assistant for the course in histology and cell biology) Dept of Medical Cell Biology, University of Uppsala, Sweden autumn 1978.
- 1976 - 1983: "Assistant", Dept of Medical Cell Biology, University of Uppsala, Uppsala Sweden 1976-09-01 - 1983-06-30.
- 1976: “3rd teaching assistant” (3rd teaching assistant) Dept of Histology, University of Umeå, Umeå, Sweden 1976-01-01 - 08-31.

Administrative and pedagogic activities

- 1979 - 1982: Served as a deputy member of the board of the Medical Faculty at the University of Uppsala, Uppsala, Sweden.
- 1981: "University pedagogical course for teachers in the Faculty of Medicine", University of Uppsala, Uppsala, Sweden.
- 1992 - present, Member of the institutional board at the Department of Molecular Medicine, Karolinska Institutet.
- 1993 - present: committee for research animal science at the Swedish Medical Research Council.
- 1995-1997: Appointed expert for the Swedish Government, Agriculture Ministry, in an investigation of the use of animals for research (Jo 1997: 03).

Research

- Published 505 articles and a large number of abstracts in the field of cell physiology, signal-transduction and experimental diabetes research.
- 505 paper, 19,779 citations, *h*-index: 74
- 19 PCT y 69 patents

Scientific awards

- 2019, Swedish Foundation for Strategic Research, MED-X 2018
- 2019, European Research Council (ERC) “Advanced Grant”
- 2013, European Research Council (ERC) “Advanced Grant”

- 2012, Novo Nordisk Fondens “Advanced Grant”
- 2012, Wallenberg Scholar, Knut and Alice Wallenberg Foundation
- 2012, Med Dr Axel Hirsch Prize, Karolinska Institutet
- 2012, Kroc Lecture, Boston University Medical Center
- 2010, Moosa Lecture from the Korean Society for Biochemistry and Molecular Biology (KSBMB) Seoul
- 2010, Distinguished Professor Award, Karolinska Institutet
- 2009, The 22nd Annual Edwin G. Krebs Lecture in Molecular Pharmacology, University of Washington, Seattle, June 2
- 2007, The Special Symposium Lecture at the 48th Enzyme Regulation Meeting in Bologna, September 25
- 2002, The Swedish Society of Physicians Commemorative Prize
- 2001, Karolina Prize, Karolinska Hospital
- 2001, Mary Jane Kugel Award Juvenile Diabetes Research Foundation International
- 2000, Hilda och Alfred Erikssons prize from the Royal Swedish Academy of Science
- 1999, Novo Nordisk Foundation Award and Lecture
- 1998, Roche Diagnostics/Juvenile Diabetes Foundation International Diabetes Care Award
- 1996, Mary Jane Kugel Award Juvenile Diabetes Research Foundation International
- 1995, Erik K Fernströms prize to young and especially successful researchers
- 1992, Research scholarship from Ulf Widengrens Minnesfond
- 1990, Procordia’s Research Scholarship

List of 55 relevant publications out of a total of 505

1. Glucose-inhibition of glucagon secretion involves activation of $GABA_A$ -receptor chloride channels. P RORSMAN, P-O BERGGREN, K BOKVIST, H ERICSON, H MÖHLER, C-G ÖSTENSON & PA SMITH. **Nature** 341: 233-236, 1989.

2. Activation by adrenaline of a low-conductance G protein-dependent K^+-channel in mouse pancreatic β-cells. P RORSMAN, K BOKVIST, C ÄMMÄLÄ, P ARKHAMMAR, P-O BERGGREN, O LARSSON & K WÅHLANDER. **Nature** 349: 77-79, 1991.

3. Inositol trisphosphate-dependent periodic activation of a Ca^{2+}-activated K^+ conductance in glucose-stimulated pancreatic β-cells. C ÄMMÄLÄ, O LARSSON, P-O BERGGREN, K BOKVIST, L JUNTTI-BERGGREN, H KINDMARK & P RORSMAN. **Nature** 353:849-852, 1991.

4. Increased activity of L-type Ca^{2+}-channels exposed to serum from patients with type 1 diabetes. L JUNTTI-BERGGREN, O LARSSON, P RORSMAN, C ÄMMÄLÄ, K BOKVIST, K WÅHLANDER, P NICOTERA, J DYPBUKT, S ORRENIUS, A HALLBERG & P-O BERGGREN. **Science** 261: 86-90. 1993.

5. Cyclic ADP-Ribose in β-cells. Md ISLAM, O LARSSON & P-O BERGGREN. **Science** 262: 584-585, 1993.

6. PKC-Dependent stimulation of exocytosis by sulfonylureas in voltage-clamped pancreatic β-cells. L ELIASSON, E RENSTRÖM, C ÄMMÄLÄ, P-O BERGGREN, A M BERTORELLO, K BOKVIST, A CHIBALIN, J T DEENEY, P R FLATT, J GÄBEL, J GROMADA, O LARSSON, P LINDSTRÖM, C J RHODES & P RORSMAN. **Science** 271: 813-815, 1996.

7. Oscillations in K_{ATP} channel activity promote oscillations in cytoplasmic free Ca^{2+} concentration in the pancreatic β-cell. O LARSSON, H KINDMARK, R BRÄNSTRÖM, B FREDHOLM & P-O BERGGREN. **Proc Natl Acad Sci USA** 93: 5161-5165, 1996.

8. Inositol hexakisphosphate stimulates non-Ca^{2+}-mediated and primes Ca^{2+}-mediated exocytosis of insulin by activation of protein kinase C. AM EFANOV, SV ZAITSEV & P-O BERGGREN. **Proc Natl Acad Sci USA** 94: 6232-6237, 1997.

9. Inhibition of phosphatases and increased Ca^{2+} channel activity by inositol hexakisphosphate. O LARSSON, CJ BARKER, Å SJÖHOLM, H CARLQVIST, RH MICHELL, A BERTORELLO, T NILSSON, RE HONKANEN, GW MAYR, J ZWILLER & P-O BERGGREN. **Science** 278: 471-474, 1997.

10. *In situ* activation of the type 2 ryanodine receptor in pancreatic beta cells requires cAMP-dependent phosphorylation. Md S ISLAM, I LEIBIGER, B LEIBIGER, D ROSSI, V SORRENTINO, TJ EKSTRÖM, H WESTERBLAD, FH ANDRADE & P-O BERGGREN. **Proc Natl Acad Sci USA** 95: 6145-6150, 1997.

11. Exocytosis of insulin promotes insulin gene transcription via the insulin receptor/PI-3 kinase/p70 s6 kinase and CaM kinase pathways. IB LEIBIGER, B LEIBIGER, T MOEDE & P-O BERGGREN. **Mol Cell** 1: 933-938, 1998.

12. Syntaxin 1 interacts with the L_D subtype of voltage-gated Ca^{2+} channels in pancreatic β cells. S-N YANG, O LARSSON, R BRÄNSTRÖM, AM BERTORELLO, B LEIBIGER, IB LEIBIGER, T MOEDE, M KÖHLER, B MEISTER & P-O BERGGREN. **Proc Natl Acad Sci USA** 96: 10164-10169, 1999.

13. Impaired insulin secretion and β-cell loss in tissue-specific knockout mice with mitochondrial diabetes. JP SILVA, M KÖHLER, C GRAFF, A OLDFORS, MA MAGNUSSON, P-O BERGGREN & N-G LARSSON. **Nature Genetics** 26: 336-340, 2000.

14. Selective insulin signaling through A and B insulin receptors regulates transcription of insulin- and glucokinase-genes in pancreatic β-cells. B LEIBIGER, IB LEIBIGER, T MOEDE, S KEMPER, RN KULKARNI, CR KAHN, L MOITOS DE VARGAS & P-O BERGGREN. **Mol Cell** 7: 559-570, 2001.

15. Phosphatidylinositol 4-kinase serves as a metabolic sensor and regulates priming of secretory granules in pancreatic β cells. HL OLSEN, M HØY, W ZHANG, AM BERTORELLO, K BOKVIST, K CAPITO, AM EFANOV, B MEISTER, P THAMS, S N YANG, P RORSMAN, P-O BERGGREN & J GROMADA. **Proc Natl Acad Sci USA**

100: 5187-5192, 2003.

16. Isoform-specific insulin receptor signalling involves different plasma membrane domains. S UHLES, T MOEDE, B LEIBIGER, P-O BERGGREN & IB LEIBIGER. **J Cell Biol** 163: 1327-1337, 2003.

17. Apolipoprotein CIII promotes Ca^{2+}-dependent β cell death in type 1 diabetes. L JUNTTI-BERGGREN, E REFAI, I APPELSKOG, M ANDERSSON, G IMREH, N DEKKI, S UHLES, L YU, WJ GRIFFITHS, S ZAITSEV, I LEIBIGER, S-N YANG, G OLIVECRONA, H JÖRNVALL & P-O BERGGREN. **Proc Natl Acad Sci USA** 101: 10090-10094, 2004.

18. Removal of Ca^{2+} channel β_3 subunit enhances Ca^{2+} oscillation frequency and insulin exocytosis. P-O BERGGREN, S-N YANG, M MURAKAMI, AM EFANOV, S UHLES, M KÖHLER, T MOEDE, A FERNSTRÖM, IB APPELSKOG, CA ASPINWALL, SV ZAITSEV, O LARSSON, L MOITOSO DE VARGAS, C FECHER-TROST, P WEISSGERBER, A LUDWIG, B LEIBIGER, L JUNTTI-BERGGREN, CJ BARKER, J GROMADA, M FREICHEL, IB LEIBIGER & V FLOCKERZI. **Cell** 119: 273-284, 2004.

19. Neuronal calcium sensor-1 potentiates glucose-dependent exocytosis in pancreatic β cells through activation of phosphatidylinositol 4-kinase β. J GROMADA, C BARK, K SMIDT, AM EFANOV, J JANSON, SA MANDIC, D-L WEBB, W ZHANG, B MEISTER, A JEROMIN & P-O BERGGREN. **Proc Natl Acad Sci USA** 102: 10303-10308, 2005.

20. Transthyretin constitutes a functional component in pancreatic β-cell stimulus-secretion coupling. E REFAI, N DEKKI, S-N YANG, G IMREH, O CABRERA, L YU, G YANG, S NORGREN, SM RÖSSNER, L INVERARDI, C RICORDI, G OLIVECRONA, M ANDERSSON, H JÖRNVALL, P-O BERGGREN & L JUNTTI-BERGGREN. **Proc Natl Acad Sci USA** 102: 17020-17025, 2005.

21. The unique cytoarchitecture of human pancreatic islets has implications for islet cell function. O CABRERA, DM BERMAN, NS KENYON, C RICORDI, P-O BERGGREN & A CAICEDO. **Proc Natl Acad Sci USA** 103: 2334-2339, 2006.

22. Glucose recruits K_{ATP} channels via non-insulin-containing dense-core granules. SN YANG, N DEKKI WENNA, J YU, G YANG, H QIU, L YU, L JUNTTI-BERGGREN, M KÖHLER & P-O BERGGREN. **Cell Metab** 6: 217-228, 2007.

23. Requirement of inositol pyrophosphates for full exocytotic capacity in pancreatic β-cells. C ILLIES, J GROMADA, R FIUME, B LEIBIGER, J YU, K JUHL, S-N YANG, DK BARMA, JR FALCK, A SAIARDI, CJ BARKER & P-O BERGGREN. **Science** 318: 1299-1302, 2007.

24. Non-invasive *in vivo* imaging of pancreatic islet cell biology. S SPEIER, D NYQVIST, O CABRERA, J YU, RD MOLANO, A PILEGGI, T MOEDE, M KOHLER, J

WILBERTZ, B LEIBIGER, C RICORDI, IB LEIBIGER, A CAICEDO & P-O BERGGREN. **Nature Medicine** 14: 574-578, 2008.

25. Glutamate is a positive autocrine signal for glucagon release. O CABRERA, MC JACQUES-SILVA, S SPEIER, S-N YANG, M KÖHLER, A FACHADO, E VIEIRA, JR ZIERATH, R KIBBEY, DM BERMAN, NS KENYON, C RICORDI, A CAICEDO & P-O BERGGREN. **Cell Metab** 7: 545-554, 2008

26. Noninvasive high-resolution *in vivo* imaging of cell biology in the anterior chamber of the mouse eye. S SPEIER, D NYQVIST, M KÖHLER, A CAICEDO, IB LEIBIGER & P-O BERGGREN. **Nature Protocols** 3:1278-1286, 2008.

27. The anterior chamber of the eye as a clinical transplantation site for the treatment of diabetes. VL PEREZ, A CAICEDO, DM BERMAN, E ARRIETA, MH ABDULREDA, R RODRIGUEZ-DIAZ, A PILEGGI, E HERNANDEZ, SR DUBOVY, JM PAREL C RICORDI, NM KENYON, NS KENYON & P-O BERGGREN. **Diabetologia** 54: 1121-1126, 2011.

28. Alpha cells secrete acetylcholine as a non-neuronal paracrine signal priming human beta cell function. R RODRIGUEZ-DIAZ, R DANDO, MC JACQUES-SILVA, A FACHADO, J MOLINA, M ABDULREDA, C RICORDI, SD ROPER, P-O BERGGREN & A CAICEDO. **Nature Medicine** 17: 888-892, 2011.

29. Innervation patterns of autonomic axons in the human endocrine pancreas. R RODRIGUEZ-DIAZ, MH ABDULREDA, AL FORMOSO, I GANS, C RICORDI, P-O BERGGREN & A CAICEDO. **Cell Metab** 14: 45-54, 2011.

30. Lowering apolipoprotein CIII delays onset of type 1 diabetes. R HOLMBERG, E REFAI, A HÖÖG, RM CROOKE, M GRAHAM, G OLIVECRONA, P-O BERGGREN & L JUNTTI-BERGGREN. **Proc Natl Acad Sci USA** 108: 10685-10689, 2011.

31. High-resolution, non-invasive longitudinal live imaging of immune responses. MH ABDULREDA, G FALEO, RD MOLANO, M LOPEZ-CABEZAS, J MOLINA, Y TAN, OAR ECEVERRIA, E ZAHR-AKRAWI, R RODRIGUEZ-DIAZ, PK EDLUND, I LEIBIGER, AL BAYER, V PEREZ, C RICORDI, A CAICEDO, A PILEGGI & P-O BERGGREN. **Proc Natl Acad Sci USA** 108: 12863-12868, 2011.

32. Real-time detection of acetylcholine release from the human endocrine pancreas. R RODRIGUEZ-DIAZ, R DANDO, YA HUANG, P-O BERGGREN, SD ROPER & A CAICEDO. **Nature Protocols** 7: 1015-1023, 2012.

33. Inositol hexakisphosphate suppresses excitatory neurotransmission via synaptotagmin-1 C2B domain in the hippocampal neuron. S-N YANG, Y SHI, G YANG, Y LI, L YU, O-H SHIN, T BACAJ, TC SÜDHOF, J YU & P-O BERGGREN. **Proc Natl Acad Sci USA** 109: 12183-12188, 2012.

34. Glucagon regulates its own synthesis by autocrine signaling. B LEIBIGER, T MOEDE, TP MUHANDIRAMLAGE, D KAISER, P VACA SANCHEZ, IB LEIBIGER & P-O

BERGGREN. **Proc Natl Acad Sci USA** 109: 20925-20930, 2012.

35. Noninvasive *in vivo* model demonstrating the effects of autonomic innervations on pancreatic islet function. R RODRIGUEZ-DIAZ, S SPEIER, RD MOLANO, A FORMOSO, I GANS, MH ABDULREDA, O CABRERA, J MOLINA, A FACHADO, C RICORDI, I LEIBIGER, A PILEGGI, P-O BERGGREN & A CAICEDO. **Proc Natl Acad Sci USA** 109: 21456-21461, 2012.

36. Imaging dynamics of $CD11c^+$ cells and $Foxp3^+$ cells in progressive autoimmune insulitis in the NOD mouse model of type 1 diabetes. A SCHMIDT-CHRISTENSEN, L HANSEN, E ILEGEMS, N FRANSÉN-PETTERSSON, U DAHL, S GUPTA, Å LAREFALK, TD HANNIBAL, A SCHULZ, P-O BERGGREN & D HOLMBERG. **Diabetologia** 56: 2669-2678, 2013.

37. Reporter islets in the eye reveal the plasticity of the endocrine pancreas. E ILEGEMS, A DICKER, S SPEIER, A SHARMA, A BAHOW, P KARLSSON EDLUND, IB LEIBIGER & P-O BERGGREN. **Proc Natl Acad Sci USA** 110: 20581-20586, 2013.

38. Real-time immune cell interactions in target tissue during autoimmune-induced damage and graft tolerance. J MISKA, MH ABDULREDA, P DEVARAJAN, JB LUI, J SUZUKI, A PILEGGI, P-O BERGGREN & Z CHEN. **J Exp Med** 211: 441-456, 2014.

39. Adipsin is an adipokine that improves β cell function in diabetes. JC LO, S LJUBICIC, B LEIB IGER, M KERN, IB LEIBIGER, T MOEDE, ME KELLY, DC BHOWMICK, I MURANO, P COHEN, AS BANKS, MJ KHANDEKAR, A DIETRICH, JS FLIER, S CINTI, M BLÜHER, NN DANIAL, P-O BERGGREN & B SPIEGELMAN. **Cell** 158: 41-53, 2014.

40. Ciliary dysfunction impairs pancreatic insulin secretion and promotes development of type 2 diabetes in rodents. JM GERDES, S CHRISTOU-SAVINA, Y XIONG, T MOEDE, N MORUZZI, P KARLSSON-EDLUND, B LEIBIGER, IB LEIBIGER, C-G ÖSTENSON, PL BEALES & P-O BERGGREN. **Nature Communications** 2014 Nov 6;5:5308. DOI: 1038/ncomms6308, 2014.

41. Young capillary vessels rejuvenate aged pancreatic islets. J ALMACA, J MOLINA, R ARROJO E DRIGO, MH ABDULREDA, W BAE JEON, P-O BERGGREN, A CAICEDO & H GIL NAM. **Proc Natl Acad Sci USA** 111: 17612-17617, 2014.

42. Apolipoprotein CIII links islet insulin resistance to β-cell failure in diabetes. K ÅVALL, Y ALI, IB LEIBIGER, B LEIBIGER, T MOEDE, M PASCHEN, A DICKER, E DARÉ, M KÖHLER, E ILEGEMS, MH ABDULREDA, M GRAHAM, RM CROOKE, VSY TAY, E REFAI, SK NILSSON, S JACOB, L SELANDER, P-O BERGGREN & L JUNTTI-BERGGREN. **Proc Natl Acad Sci USA** 112: E2611-E2619, 2015.

43. PI3K-C2α knockdown results in re-routing of insulin signaling and pancreatic beta cell proliferation. B LEIBIGER, T MOEDE, M PASCHEN, N-O YUNN, JH LIM, SH RYU, T PEREIRA, P-O BERGGREN & IB LEIBIGER. **Cell Reports** 13: 15-22, 2015.

44. Liraglutide compromises pancreatic beta cell function in a humanized mouse model. MH ABDULREDA, R RODRIGUEZ-DIAZ, A CAICEDO & P-O BERGGREN. **Cell Metab** 23: 541-546, 2016.

45. Human beta cells produce and release serotonin to inhibit glucagon secretion from alpha cells. J ALMACA, J MOLINA, D MENEGAZ, AN PRONIN, A TAMAYO, V SLEPAK, P-O BERGGREN & A CAICEDO. **Cell Reports** 17: 3281-3291, 2016.

46. Pancreatic islet blood flow dynamics in primates. JA DIEZ, R ARROJO E DRIGO, X ZHENG, OV STELMASHENKO, M CHUA, R RODRIGUEZ-DIAZ, M FUKUDA, M KÖHLER, I LEIBIGER, SMM TUN, GJ AUGUSTINE, VA BARATHI, P-O BERGGREN. **Cell Reports** 20: 1490-1501, 2017.

47. Paracrine interactions within the pancreatic islet determine the glycemic set point. R RODRIGUEZ DIAZ, RD MOLANO JR WEITZ, MH ABDULREDA DM BERMAN-WEINBERG, B LEIBIGER, I LEIBIGER, NS KENYON, C RICORDI, A PILEGGI, A CAICEDO & P-O BERGGREN. **Cell Metab** 27: 549-558, 2018.

48. Blocking Ca^{2+} channel β_3 subunit reverses diabetes. K LEE, J KIM, M KÖHLER, J YU, Y SHI, S-N YANG, SH RYU & P-O BERGGREN. **Cell Reports** 24: 922-934, 2018.

49. Operational immune tolerance towards transplanted allogeneic pancreatic islets in mice and a non-human primate. MH ABDULREDA, DM BERMAN, A SHISHIDO, C MARTIN, M HOSSAMELDIN, A TSHIGGFRIE, LF HERNANDEZ, C RICORDI, J-M PAREL, E JANKOWSKA-GAN, WJ BURLINGHAM, EA ARRIETA-QUINTERO, VL PEREZ, NS KENYON & P-O BERGGREN. **Diabetologia** 62;(5)811-821,2019. Doi: org/10.1007/s00125-019-4814-4, 2019.

50. Structural basis for delta cell paracrine regulation in pancreatic islets. R ARROJO-DRIGO, S JACOB, C GARCIA-PRIETO, X ZHENG, M FUKUDA, H TRAN THI NHU, O STELMASHENKO, FL MARTINS PECANHA, R RODRIGUES-DIAZ, E BUSHONG, T DEERINCK, S PHAN, Y ALI, I LEIBIGER, M CHUA, T BOUDIER, SH SONG, M GRAF, G AUGUSTINE, M ELLISMAN, PO BERGGREN. **Nature Communications** 16:10(1):3700, 2019. Doi:10.1038/s41467-019-11517-x.

51. Mechanism and effects of pulsatile GABA secretion from cytosolic pools in the human beta cell. MENEGAZ D, WALKER HAGAN D, ALMAÇA J, CIANCIARUSO C, RODRIGUEZ-DIAZ R, MOLINA J, DOLAN RM, BECKER MW, SCHWALIE PC, NANO R, LEBRETON F, KANG C, SAH R, GAISANO HY, BERGGREN PO, BAEKKESKOV S, CAICEDO A, PHELPS EA. **Nature Metabolism** November 2019, Vol 1, 1110-1126.

52. Intraocular Pressure Monitoring Following Islet Transplantation to the Anterior Chamber of the Eye. KIM J, KIM J, KU M, CHA E, JU S, PARK WY, KIM KH, KIM DW, BERGGREN PO, PARK JU. **Nano Letters** November, 2019, Doi: 10.1021/acs.nanolett.9b03605

53. IgGs from patients with amyotrophic lateral sclerosis and diabetes target $CA_v\alpha_2\delta$ subunits impairing islet cell function and survival. SHI Y, PARK KS, KIM SH, YU J, ZHAO K, YU L, OH KW, LEE K, KIM J, CHAGGAR K, LI Y, DOLPHIN AC, CATTERALL WA, RYU SH, YANG SN, BERGGREN PO. **Proc Natl Acad Sci USA** November, 2019, Doi: www.pnas.org/cgi/doi/10.1073/pnas.1911956116.

54. Enhanced expression of β-cell $Ca_v3.1$ channels impairs insulin release and glucose homeostasis. YU J, SHI Y, ZHAO K, YANG G, YU L, LI Y, ANDERSSON EM, ÄMMÄLÄ C, YANG SN, BERGGREN PO. **Proc Natl Acad Sci USA** 2020 Jan 7;117(1):448-453. Doi: 10.1073/pnas.1908691117.

55. In vivo Ca^{2+} dynamics in single pancreatic β-cells. JACOB S, KÖHLER M, TRÖSTER P, VISA M, GARCÍA-PRIETO CF, ALANENTALO T, MOEDE T, LEIBIGER B, LEIBIGER IB, BERGGREN PO. **FASEB J** 2020 Jan;34(1):945-959. Doi: 10.1096/fj.201901302RR.

PCT Applications, International patents (March 10, 2020)

1. PCT Publication No. WO2020/016221, Published: January 23, 2020, Title: "Methods and Reagents for Treating Diabetes" Inventor: Per-Olof Berggren.

2. PCT Publication No. WO2019/070316, Published: March 7, 2019, Title: "Non-Invasive In Vivo Imaging and Methods for Treating Diabetes" Inventors: Per-Olof Berggren and Alejandro Caicedo.

3. PCT Publication No. WO2019/072542, Published: March 7, 2019, Title: "Methods for Monitoring Physiological Status of a Body Organ", Inventor: Per-Olof Berggren.

4. PCT Publication No. WO2018/104499, Published: June 14, 2018, Title: "Methods for Treating and Limiting Development of Obesity and Fatty Liver Disorders" Inventors: Lisa Juntti-Berggren and Per Olof Berggren.

5. PCT Publication No. WO2016/128358, Published: August 18, 2016, Title: Methods for Treating and/or Limiting Development of Diabetes in Subjects with Amyotrophic Lateral Sclerosis Inventor: Per-Olof Berggren.

6. PCT Publication No. WO14/140113, Published: September 18, 2014, Title: "Methods for Treating and/or Limiting Development of Diabetes" Inventor: Per-Olof Berggren and Lisa Juntti-Berggren.

7. PCT Publication No. WO14/095875, Published: June 26, 2014, Title: "Method for Treating and/or Limiting Development of Diabetes" Inventor: Per-Olof Berggren.

8. PCT Publication No. WO14/ 016400, Published: January 30, 2014, Title: "Methods for Monitoring Physiological Status of a Body Organ" Inventor: Per-Olof Berggren.

9. PCT Publication No. WO13/000920, Published: January 3, 2013, Title: “Method for Treating and/or Limiting Development of Diabetes” Inventor: Per-Olof Berggren.

10. PCT Publication No. WO12/158487, Published: November 22, 2012, Title: “System and Methods for Motorized Injection and Aspiration” Inventors: Midhat H. Abdulreda, Per-Olof Berggren and Freites.

11. PCT Publication No. WO11/116392, Published: September 22, 2011, Title: “Use Of P2X Purinnergic Receptor Agonists To Enhance Insulin Secretion In Pancreatic Beta Cells” Inventors: Per-Olof Berggren, Alejandro Caicedo and Caroline Jacques-Silva.

12. PCT Publication No. WO09/114718, Published: September 17, 2009, Title: “Methods and Assays for Detecting and Treating Hypoglycemia” Inventors: Per-Olof Berggren, Alejandro Caicedo and Over Cabrera.

13. PCT Publication No. WO09/027107, Published: March 5, 2009, Title: “Inositol Pyrophosphates Determine Exocytotic Capacity” Inventors: Per-Olof Berggren and Christopher J. Barker.

14. PCT Publication No. WO09/027106, Published: March 5, 2009, Title: “Non-Invasive In Vivo Imaging and Methods for Treating Type 1 Diabetes” Inventors: Per-Olof Berggren and Alejandro Caicedo.

15. PCT Publication No. WO06/021451, Published: March 2, 2006, Title: “Transthyretin Constitutes a Functional Component in Pancreatic B-Cell Stimulus-Secretion Coupling” Inventors: Per-Olof Berggren.

16. PCT Publication No. WO05/108982, Published: November 17, 2005, Title: “Methods for Identifying Compounds for Treating Diabetes Mellitus” Inventors: Suad Efenidc.

17. PCT Publication No. WO04/097429, Published: November 11, 2004, Title: “Methods for Identifying Compounds for the Treatment of Type 1 Diabetes” Inventors: Per-Olof Berggren.

18. PCT Publication No. WO03/078630, Published: September 25, 2003, Title: “Inhibition of the B3 Subunit of L-Type Ca2+ Channels” Inventors: Per-Olof Berggren.

19. PCT Publication No. WO02/079786, Published: October 10, 2002, Title: “Novel Mechanism for Identifying Drugs for the Treatment of Type II Diabetes” Inventors: Per-Olof Berggren, Barbara Leibiger and Ingo Leibiger.

PATENTS

1. HK Patent No. HK1169047 Issued: January 24, 2020 Title “Method for Treating Type 1 Diabetes” Inventors: Per-Olof Berggren and Alejandro Caicedo.

2. US Patent No. 10493108 Issued: December 3, 2019 “Non-Invasive In Vivo Imaging and Methods for Treating Diabetes” Inventors: Per-Olof Berggren and Eljandro Caicedo.

3. US Patent No. 10,338,060 Issued: July 2, 2019 Title: “Methods for Monitoring Physiological Status of a Body Organ” Inventors: Per-Olof Berggren.

4. HK Patent No. HK1196874 Issued: June 6, 2019 Title: “Method for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren

5. EP Patent No. 2441462 Issued: May 8, 2019 Title: “Methods for Treating Type 1 Diabetes” Inventors: Per-Olof Berggren and Eljandro Caicedo.

6. US Patent No. 10,226,530 Issued: March 12, 2019 Title: “Methods for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren and Shao-Nian Yang

7. US Patent No. 10,228,364 Issued: March 12, 2019 Title:” Methods for Monitoring Physiological Status of a Body Organ” Inventor: Per-Olof Berggren

8. JP Patent No. 6456853 Issued: Not given yet Title: “Methods for Treating and/or Limiting Development Diabetes” Inventors: Per-Olof Berggren and Lisa Juntti-Berggren (NOT AVAILABLE YET FOR DOWNLOAD)

9. US Patent No. 10207012 Issued: February 19, 2019 Title: “Non-Invasive In Vivo Imaging and Methods for Treating Type 1 Diabetes” Inventors: Per-Olof Berggren and Aljandro Caicedo

10. HK Patent No. 1214355 Issued: February 1, 2019 “Methods for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren and Shao-Nian Yang. (Not yet available)

11. KR Patent No. 10-1937260 Issued: January 4, 2019 “Method for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren

12. JP Patent No. 6456853 Issued: December 28, 2018 “Methods for Treating and/or Limiting Development Diabetes” Inventors: Per-Olof Berggren, and Lisa Juntti-Berggren

13. US Patent No. 10060935 Issued: August 28, 2018 Title: “Apolll and the Treatment and Diagnosis of Diabetes” Inventors: Per-Olof Berggren.

14. EP Patent No. 2724155 Issued: August 15, 2018 Title: “Method for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren.

15. EP Patent No. 2936151 Issued: July 18, 2018 Title: “Method for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren and Shao-Nian Yang.

16. HK Patent No. 121999 Issued: June 1, 2018 Title: “Methods for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren and Lisa Juntti-Berggren

17. US Patent No. 9968675 Issued: May 15, 2018 Title: “Methods for Treating and/or Limiting Development of Diabetes in Subjects with Amyotrophic Lateral Sclerosis” Inventors: Per-Olof Berggren

18. JP Patent No. 6322209 Issued: April 13, 2018 Title: "Method for Treating and/or Limiting Development of Diabetes" Inventors: Per-Olof Berggren and Shao-Nian Yang.

19. HK Patent No. 1144903 Issued: April 6, 2018 Title: "Compound that Activates an Ampa/Kainate Type Receptor for Treating Hypoglycemia" Inventors: Per-Olof Berggren, Alejandro Caicedo and Over Cabrera.

20. EP Patent No. 2970463 Issued: November 29, 2017 Title: "Methods for Treating and/or Limiting Development Diabetes" Inventors: Per-Olof Berggren and Lisa Juntti-Berggren.

21. JP Patent No. 6234453 Issued: November 2, 2017 Title: "Methods for Monitoring Physiological Status of a Body Organ" Inventors: Per-Olof Berggren.

22. JP Patent No. 6242790 Issued: November 17, 2017 Title: "Methods for Identifying Candidate Compounds for Treating and /or Limiting Develoopment of Diabetes" Inventors: Per-Olof Berggren.

23. KR Patent No. 10-1790370 Issued: October 19, 2017 Title: "Use of P2X Purinnergic Receptor Agonists to Enhance Insulin Secretion in Pancreatic Beta Cells" Inventors: Per-Olof Berggren, Alejandro Caicedo and Caroline Jacques-Silva.

24. US Patent No. 9,744,232 Issued: August 29, 2017 Title: "Methods for treating and/or limiting development of diabetes" Inventors: Per-Oof Berggren and Shao-Nian Yang.

25. US Patent No. 9,744,293 Issued: August 29, 2017 Title: "System and methods for motorized injection and aspiration" Inventors: Midhat H. Abdulreda, Per-Olof Berggren and Freites Conrado

26. CN Patent ZL201380061912.3 Issued: August 18, 2017 Title: "Methods for Monitoring Physiological Status of a Body Organ" Inventors: Per-Olof Berggren and Shao-Nian Yang.

27. US Patent No. 9,702,867 Issued: July 11, 2017 Title: "Methods for monitoringphysiological status of a body organ" Inventors: Per-Olof Berggren.

28. US Patent No. 9,700,617 Issued: July 11, 2017 Title: "Methods for treating and/or limiting development of diabetes in subjects with amyotrophic lateral sclerosis" Inventors: Per-Olof Berggren.

29. EP Patent No. 2254568 Issued: June 7, 2017 Title: "Compound that activates an Ampa/Kainate type receptor for treating hypoglycemia" Inventors: Per-Olof Berggren, Aljandro Caicedo and Over Cabrera.

30. *JP Patent No. 6092191 Issued: February 17, 2017 Title: "Systems and Methods for Motorized Injection and Aspiration" Inventors: Midhat H. Abdulreda, Per-Olof Berggren and Freites Conrado.*

31. US Patent No. 9,463,205 Issued, October 11, 2016 Title: “Non-Invasive In Vivo Imaging and Methods for Treating Type 1 Diabetes” Inventors: Per-Olof Berggren and Alejandro Caicedo. 9,463,205

32. US Patent No. 9,462,973 Issued, Oct 11, 2016 Title: “Methods for Monitoring Physiological Status of a Body Organ” Inventor: Per-Olof Berggren.

33. CN Patent No. 103517723 Issued: August 17, 2016 Title: “System and Methods for Motorized Injection and Aspiration” Inventors: Midhat H. Abdulreda, Per-Olof Berggren and Freites Conrado.

34. CN Patent No. 102946887 Issued: June 29, 2016 Title: “Use Of P2X Purinnergic Receptor Agonists To Enhance Insulin Secretion In Pancreatic Beta Cells” Inventors: Per-Olof Berggren, Alejandro Caicedo and Caroline Jacques-Silva

35. US Patent No. 9,353,183 Issued, May 31, 2016 Title: “Methods for Treating and/or Limiting Development of Diabetes” Inventor: Per-Olof Berggren and Shao-Nian Yang. 9,353,183

36. CN Patent No. 103620404 Issued: March 30, 2016 Title: “Method for Treating and/or Limiting Development of Diabetes” Inventor: Per-Olof Berggren.

37. JP Patent No. 5883221 Issued: February 12, 2016 Title: “Non-Invasive In Vivo Imaging and Methods for Treating Type I Diabetes” Inventors: Per-Olof Berggren and Alejandro Caicedo.

38. JP Patent No. 5882640, Issued: February 12, 2016 Title: “Method of Manufacturing Implant for Enhancing Insulin Generation in Patient with Type I Diabetes” Inventors: Per-Olof Berggren and Alejandro Caicedo.

39. US Patent No. 9,169,484 Issued: October 27, 2015 Title: “ApoIII and the Treatment and Diagnosis of Diabetes” Inventor: Per-Olof Berggren.

40. US Patent No. 9,068,973 Issued: June 30, 2015 Title: “Methods for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren and Shao-Nian Yang.

41. US Patent No. 9,068,971 Issued: June 30, 2015 Title: “Methods for Treating and/or Limiting Development of Diabetes” Inventors: Per-Olof Berggren and Shao-Nian Yang.

42. US Patent No. 9,062,306 Issued: June 23, 2015 Title: “Methods for Identifying Compounds for Treating Type 1 Diabetes” Inventors: Per-Olof Berggren.

43. EP Patent No. 1485482 Issued: October 1, 2014 Title: “Inhibition Of The Beta3 Subunit Of L-Type Ca2+ Channels” Inventors: Per-Olof Berggren and Veit Flockerzi.

44. TR Patent No. TR201413621T4, Issued: October 1, 2014 Title: “Inhibition of the Beta3 Subunit of L-Type Ca2+ Channels” Inventors: Per-Olof Berggren. (No link available)

45. JP Patent No. 5597555 Issued: August 15, 2014 Title: "Methods And Assays For Detecting And Treating Hypoglycemia" Inventors: Per-Olof Berggren, Alejandro Caicedo and Over Cabrera.

46. CN Patent No. ZL200980112577.9 Issued: June 18, 2014 Title: "Methods And Assays For Detecting And Treating Hypoglycemia"

47. US Patent No. 8,716,241 Issued: May 6, 2014 Title: "Apolll and the Treatment and Diagnosis of Diabetes" Inventors: Per-Olof Berggren.

48. HK Patent No. HK1144252 Issued: March 21, 2014 Title: "Methods for Drug Screening Using Non-invasive in vivo Imaging" Inventors: Per-Olof Berggren and Alejandro Caicedo.

49. JP Patent No. 5491395 Issued: March 7, 2014 Title: "Inositol Pyrophosphates Determine Exocytotic Capacity" Inventors: Per-Olof Berggren and Christopher J. Barker.

50. EP Patent No. 2194993 Issued: December 18, 2013 Title: "Methods for Drug Screening Using Non-Invasive In Vivo Imaging" Inventors: Per-Olof Berggren and Alejandro Caicedo.

51. US Patent No. 8,557,513 Issued: October 15, 2013 Title: "Methods for Treating and/or Limiting Development of Diabetes" Inventors: Per-Olof Berggren and Shao-Nian Yang.

52. US Patent No. 8,507,444 Issued: August 13, 2013 Title: "Apo111 and the Treatment and Diagnosis of Diabetes" Inventors: Per-Olof Berggren.

53. US Patent No. 8,466,185 Issued: June 18, 2013 Title: "Methods and Assays for Detecting And Treating Hypoglycemia" Inventors: Per-Olof Berggren, Alejandro Caicedo and Over Cabrera.

54. EP Patent No. 1623228 Issued: December 5, 2012 Title: "ApoCIII and the Treatment and Diagnosis of Diabetes" Inventor: Per-Olof Berggren.

55. CA Patent No. 2,479,414 Issued: August 28, 2012 Title: "Inhibition Of The Beta3 Subunit Of L-Type Ca2+ Channels" Inventors: Per-Olof Berggren and Veit Flockerzi.

56. US Patent No. 8,084,439 Issued: December 27, 2011 Title: "Methods for Identifying Compounds for the Treatment of Type 1 Diabetes" Inventor: Per-Olof Berggren.

57. HK Patent No. HK1144253 Issued: October 14, 2011 Title: "Inositol Pyrophosphates Determine Exocytotic Capacity" Inventors: Per-Olof Berggren and Christopher J. Barker. http://ipsearch.ipd.gov.hk/patent/ereg/fssr02000.jsp?AH_NO=10110683&AH_SEQ=0&LANG=en

58. US Patent No. 8,030,288 Issued: October 4, 2011 Title: "Methods for Identifying Compounds for the Treatment of Type 1 Diabetes" Inventor: Per-Olof Berggren.

59. US Patent No. 8,021,853 Issued: September 20, 2011 Title: "Inhibition of the Beta3 Subunit of L-type Ca2+ Channels" Inventors: Per-Olof Berggren and Veit Flockerzi.

60. EP Patent No. 1819354 Issued: July 20, 2011 Title: "Transthyretin Constitutes A Functional Component in Pancreatic B-Cell Stimulus-Secretion" Inventors: Per-Olof Berggren.

61. AT Patent No. E516813 Issued: July 20, 2011 Title: "Methods and Compounds for Treating Diabetes" Inventors: Per-Olof Berggren and Lisa Juntti-Berggren.

62. EP Patent No. 2197479 Issued: June 15, 2011 Title: "Inositol Pyrophosphates Determine Exocytotic Capacity" Inventors: Per-Olof Berggren and Christopher J. Barker.

63. AT Patent No. 512667 Issued: June 15, 2011 Title: "Inositol Pyrophosphates Determine Exocytotic Capacity" Inventors: Per-Olof Berggren and Christopher J. Barker. (Link not available)

64. MX Patent No. 284758 Issued: March 16, 2011 Title: "Inhibition of the B3 Subunit of L-Type Ca2+ Channels" Inventors: Per-Olof Berggren. (Link not available)

65. US Patent No. 7,855,049 Issued: December 21, 2010 Title: "Inositol Pyrophosphates Determine Exocytotic Capacity" Inventors: Per-Olof Berggren and Christopher J. Barker.

66. JP Patent No. 4398259 Issued: October 30, 2009 Title: "Inhibition of the B3 Subunit of L-Type Ca2+ Channels" Inventors: Per-Olof Berggren.

67. US Patent No. 7,601,687 Issued: October 13, 2009 Title: "Mechanism for Identifying Drugs for the Treatment of Type II Diabetes" Inventors: Per-Olof Berggren, Barbara Leibiger and Ingo Leibiger.

68. US Patent No. 7,381,523 Issued: June 3, 2008 Title: "Methods for Identifying Compounds for Treating Diabetes Mellitus" Inventor: Suad Efindic. 7,381,523

69. AU Patent No. 2003216860 Issued: April 24, 2008 Title: "Inhibition of the B3 Subunit of L-Type Ca2+Channels" Inventors: Per-Olof Berggren.

PUBLICATIONS

1 Determination of calcium in microgram amounts of dried biological material by flameless atomic absorption spectrophotometry with special reference to the pancreatic islets. P-O BERGGREN, O BERGLUND & B HELLMAN. **Anal Biochem** 84:393-401, 1978.

2 Glucose inhibition of ^{45}Ca efflux from pancreatic islets. E. GYLFE, A BUITRAGO, P-O BERGGREN, K HAMMARSTRÖM & B HELLMAN. **Am J Physiol** 35:E191- 196, 1978.

3 Evidence for divergent glucose effects on calcium metabolism in pancreatic β- and α_2-cells. P-O BERGGREN, C-G ÖSTENSON, B PETERSSON & B HELLMAN. **Endocrinology** 105:1463-1468, 1979.

4 The role of calcium in insulin secretion. B HELLMAN, T ANDERSSON, P-O BERGGREN, P FLATT, E GYLFE & K-D KOHNERT. In: **Hormones and Cell Regulation** (DUMONT J NUNEZ J, eds), vol 3. North-Holland Publishing Company, Amsterdam, New York, Oxford, pp 69-97, 1979.

5 Participation of calcium pools in insulin secretion. B HELLMAN, H ABRAHAMSSON, T ANDERSSON, P-O BERGGREN, P FLATT & E GYLFE. **Proceedings of the 10th Congress of the International Diabetes Federation, Vienna,** September 9-14, 1979. **In:** International Congress Series No 500 (WALDHÄUSL W K, eds), pp 160-165, 1979.

6 Calcium movements in relation to glucose-stimulated insulin secretion. B HELLMAN, H ABRAHAMSSON, T ANDERSSON, P-O BERGGREN, P FLATT, E GYLFE & H-J HAHN. **Horm Metab Res** (suppl 10): 122-130, 1980.

7 Subcellular distribution of zinc in islet β-cell fractions. T ANDERSSON, P-O BERGGREN & PR FLATT. **Horm Metab Res** 12:275-276, 1980.

8 Calcium and pancreatic β-cell function. IX. Demonstration of lanthanide-induced inhibition of insulin secretion independent of modifications in transmembrane Ca^{2+} fluxes. P R FLATT, P-O BERGGREN, E GYLFE & B HELLMAN. **Endocrinology** 107:1007-1013, 1980.

9 The determination of barium, lanthanum and magnesium in pancreatic islets by electrothermal atomic absorption spectrometry. P-O BERGGREN. **Anal Chim Acta** 119:161-166, 1980.

10 Calcium and pancreatic β-cell function. IX. Modification of Ca fluxes by Na^+ removal. B HELLMAN, T ANDERSSON, P-O BERGGREN & P RORSMAN. **Biochem Med** 24:143-152, 1980.

11 Ca^{2+}-transport in pancreatic β-cells during glucose stimulation of insulin secretion. B HELLMAN, E GYLFE, P-O BERGGREN, T ANDERSSON, H ABRAHAMSSON, P RORSMAN & C BETSHOLTZ. **Ups J Med Sci** 85:321-329, 1980.

12 Characteristics of Ba^{2+} stimulated insulin release with special reference to pancreatic β-cells sensitized by cyclic AMP. P-O BERGGREN. **Acta Biol Med Ger** 40:15-17, 1981.

13 Effects of glucose on the calcium content of intact β-cells and cellular organelles. T ANDERSSON, P-O BERGGREN & E GYLFE. **Ups J Med Sci** 86:165-170, 1981.

14 Insulin antibody production in guinea pigs is accompanied by disturbances in pancreatic islet morphology and glucagon secretion. C-G ÖSTENSON, I SWENNE, P R FLATT & P-O BERGGREN. **Diabete Metab** 8:241-247, 1982.

15 Amounts and distribution of intracellular magnesium and calcium in pancreatic β-cells. T ANDERSSON, P-O BERGGREN, E GYLFE & B HELLMAN. **Acta Physiol Scand** 114:235-241, 1982.

16 Manganese accumulation in pancreatic β-cells and its stimulation by glucose. P RORSMAN, P-O BERGGREN & B HELLMAN. **Biochem J** 202:435-444, 1982.

17 Calcium, magnesium and zinc content in subcellular organelles of prostatic origin in human seminal plasma. B STEGMAYR, P-O BERGGREN, G RONQUIST & B HELLMAN. **Scand J Urol nephrol** 16:199-203, 1982.

18 Is Mg^{2+} important for the secretory function of the pancreatic β-cells? P BERGSTEN, P-O BERGGREN, R LARSSON & E GYLFE. **Acta Biol Med Germ** 41:1225-1228, 1982.

19 Stimulation of the insulin secretory mechanism following barium accumulation in pancreatic β-cells. P-O BERGGREN, B ANDERSSON & B HELLMAN. **Biochim Biophys Acta** 720:320-328, 1982.

20 Direct determination of manganese in microgram amounts of pancreatic tissue by electrothermal atomic absorption spectrometry. P RORSMAN & P-O BERGGREN. **Anal Chim Acta** 140:325-329, 1982.

21 The significance of calcium for the function of the pancreatic islet B- and A_2-cells: Studies employing electrothermal atomic absorption spectrometry. P-O BERGGREN. **Acta Universitatis Upsaliensis**, abstracts of Uppsala Dissertations from the Faculty of Medicine, 420, 1982.

22 The interaction between barium and calcium in β-cell-rich pancreatic islets. P-O BERGGREN, T ANDERSSON & B HELLMAN. **Biomed Res** 4:129-138, 1983.

23 Interactions between magnesium and calcium in β-cell-rich pancreatic islets. P-O BERGGREN, P BERGSTEN, E GYLFE, R LARSSON & B HELLMAN. **Am J Physiol** 244:E541-547, 1983.

24 Reduction of the cytosolic calcium activity in clonal insulin-releasing cells exposed to glucose. P RORSMAN, P-O BERGGREN, E GYLFE & B HELLMAN. **Biosci Rep** 3:939-946, 1983.

25 Distribution of chromium in the tissues of normal and genetically diabetic mice. R FLATT & P-O BERGGREN. **Biochem Soc Trans** 11:722, 1983.

26 The determination of cadmium in microgram amounts of pancreatic tissue by electrothermal atomic absorption spectrometry. T NILSSON & P-O BERGGREN. **Anal Chim Acta** 159:381-385, 1984

27 Electrical field-induced fusion to create giant insulin-producing β-cells. P-O BERGGREN. **Biomed Res** 5:445-450, 1984.

28 Application of light guides for enhancement of signal to noise ratios at low levels of luminescence detectability. S E BROLIN, P-O BERGGREN & P NAESER. In **Analytical Applications of Bioluminescence and Chemiluminescence** (Kricka, L.J., Stanley, PE:, Thorpe, G.H.G. & Whitehead, T.P., eds). Academic Press, New York, pp 479-482, 1984.

29 The sorbitol dehydrogenase reaction in bioluminescence assay. S E BROLIN, P NAESER & P-O BERGGREN. In **Analytical Applications of Bioluminescence and Chemiluminescence** (Kricka L.J., Stanley, P.E., Thorpe, G.H.G., & Whitehead, T.P., eds). Academic Press, New York, pp 515-519, 1984.

30 Mobilization of ^{45}Ca from insulin-producing RINm5F cells attached to microcarriers. H ABRAHAMSSON, P-O BERGGREN & B HELLMAN. **Am J Physiol** 247:E719-E725, 1984.

31 Proton microprobe analysis of pancreatic β-cells. U LINDH, L JUNTTI-BERGGREN, P-O BERGGREN & B HELLMAN. **Biomed Biochim Acta** 44:55-62, 1985.

32 Effects of glucose deprivation and altered Ca^{2+} concentrations on clonal insulin-producing cells (RINm5F). V HOFTIEZER, P-O BERGGREN & B HELLMAN. **Biomed Biochim Acta** 44:77-84, 1985.

33 Effects of trivalent chromium administration on endogenous chromium stores in lean and obese hyperglycaemic (ob/ob) mice. P-O BERGGREN & P R FLATT. **Nutr Rep Int** 31:213-218. 1985.

34 Endogenous chromium in tissues and body fluids of normal and genetically diabetic (db/db) mice. P-O BERGGREN & P R FLATT. **Horm Metabol Res** 17:164-165, 1985.

35 Oscillatory membrane movements of hemolysing electrofused red blood cells. AMM ZADE-OPPEN & P-O BERGGREN. **Acta Physiol Scand** 124:150, 1985.

36 Recordings of membrane potentials in single insulin producing cells. P-O BERGGREN & M SOHTELL. **Acta Physiol Scand** 124:160, 1985.

37 Effects of altered Ca^{2+} and Mg^{2+} concentrations on proliferation and functional differentiation of the clonal insulin-producing cells RINm5F. V HOFTIEZER, P-O BERGGREN & B HELLMAN. **Cancer Lett** 27:7-14, 1985.

38 Isolation of a purified mitochondrial fraction from viable clonal insulin-producing cells (RINm5F) by percoll density gradient centrifugation. H ABRAHAMSSON, T

ANDERSSON, P-O BERGGREN & H PERTOFT. **In Vitro Cell Develop Biol** 21:415-420, 1985.

39 Direct measurements of increased free cytoplasmic Ca^{2+} in mouse pancreatic β-cells following stimulation by hypoglycemic sulfonylureas. H ABRAHAMSSON, P-O BERGGREN & P RORSMAN. **FEBS Lett** 190:21-24, 1985.

40 Effects of zinc during culture of an insulin-producing rat cell line (RINm5F). V HOFTIEZER, P-O BERGGREN & B HELLMAN. **Cancer Lett** 29:15-22, 1985.

41 Measurements of cytoplasmic pH in insulin releasing cells with intracellularly trapped phenol red. E GYLFE, P-O BERGGREN & P RORSMAN. **Biomed Res** 7(3):139-144, 1986.

42 Direct evidence for opposite effects of D-glucose and D-glyceraldehyde on cytoplasmic pH of mouse pancreatic β-cells. P ARKHAMMAR, P-O BERGGREN & P RORSMAN. **Biosci Rep** 6(4):355-361, 1986.

43 Evidence for bidirectional glucose control of the cytoplasmic calcium regulating insulin release. B HELLMAN, P ARKHAMMAR, P-O BERGGREN, P BERGSTEN, E GYLFE, T NILSSON, F RORSMAN, P RORSMAN, G TRUBE & N WESSLEN. In **Diabetes 1985** (Serrano-Rios, ML & Lefebvre, PJ, eds). Elsevier Science Publishers BV, pp 177-180, 1986.

44 Stimulation of insulin release by the phorbol ester 12-0-tetradecanoylphorbol 13-acetate in the clonal cell line RINm5F despite a lowering of the free cytoplasmic Ca^{2+} concentration. P ARKHAMMAR, T NILSSON & P-O BERGGREN. **Biochim Biophys Acta** 887:236-241, 1986.

45 Microelectrode studies of D-glucose and K^+-induced changes in membrane potential of electrofused insulin-producing cells. P-O BERGGREN & M SOHTELL. **FEBS Lett** 202:367-373, 1986.

46 Accumulation of cadmium in pancreatic β cells is similar to that of calcium in being stimulated by both glucose and high potassium. T NILSSON, F RORSMAN, P-O BERGGREN & B HELLMAN. **Biochim Biophys Acta** 888:270-277, 1986.

47 Galanin inhibits glucose-stimulated insulin release by a mechanism involving hyperpolarization and lowering of cytoplasmic free Ca^{2+} concentration. B AHREN, P ARKHAMMAR, P-O BERGGREN & T NILSSON. **Biochem Biophys Res Commun** 140:1059-1063, 1986.

48 Voltage activated Na^+ currents and their suppression by phorbol ester in the clonal insulin-producing RINm5F cells. P RORSMAN, P ARKHAMMAR & P-O BERGGREN. **Amer J Physiol** 251:C912-C919, 1986.

49 Evidence for the presence of virus in clonal insulin-producing RINm5F cells. V HOFTIEZER, P W BANKSTON & P-O BERGGREN. **Experientia** 43:420-421, 1987.

50 Cadmium-induced insulin release does not involve changes in intracellular handling of calcium. T NILSSON, P-O BERGGREN & B HELLMAN. **Biochim Biophys Acta** 929:81-87, 1987.

51 Proton microprobe analysis of 15 elements in pancreatic B cells and exocrine pancreas in diabetic chinese hamsters. L JUNTTI-BERGGREN, U LINDH, P-O BERGGREN & BJ FRANKEL. **Biosci Rep** 7:33-41, 1987.

52 Enzymatic oxidation of alcohols, a way for biological studies of aldehyde formation. S E BROLIN, P-O BERGGREN & P NAESER. **Bioluminescence - New Perspectives** (Schölmerich J, Andreesen R, Kapp A, Ernst M & Woods WG, eds), John Wiley & Sons LTD, Chichester, England 519-522, 1987.

53 Inhibition of ATP-regulated K^+ channels precedes depolarization-induced increase in cytoplasmic free Ca^{2+} concentration in pancreatic β-cells. P ARKHAMMAR, T NILSSON, P RORSMAN & P-O BERGGREN. **J Biol Chem** 262:5448-5454, 1987.

54 Characterization of the inositol 1,4,5-trisphosphate-induced Ca^{2+} release in normal pancreatic β-cells. T NILSSON, P ARKHAMMAR, A HALLBERG, B HELLMAN & P-O BERGGREN. **Biochem J** 248:329-336, 1987.

55 Extracellular Ca^{2+} induces a rapid increase in cytoplasmic free Ca^{2+} in pancreatic β-cells. T NILSSON, P ARKHAMMAR & P-O BERGGREN. **Biochim Biophys Res Commun** 149:152-158, 1987.

56 The sorbitol shunt in the retina and the optic nerve of mice with inherited and STZ-induced diabetes. P NAESER, S E BROLIN & P-O BERGGREN. **Acta Ophthalmol (Copenh)** 65:693-698, 1987.

57 Heparin inhibits triphosphate-induced calcium release from permeabilized rat liver cells. T D HILL, P-O BERGGREN & A L BOYNTON. **Biochem Biophys Res Commun** 149:897-901, 1987.

58 Stimulation of pancreatic islet beta-cell replication by oncogenes. M WELSH, N WELSH, T NILSSON, P ARKHAMMAR, R BLAKE PEPINSKY, D F STEINER & P-O BERGGREN. **Proc Natl Acad Sci USA** 85:116-120, 1988.

59 Heparin inhibits IP3-induced Ca^{2+} release from permeabilized pancreatic β-cells. T NILSSON, J ZWILLER, A L BOYNTON & P-O BERGGREN. **FEBS Lett** 229:211-214, 1988.

60 Galanin and the endocrine pancreas. B AHREN, P RORSMAN & P-O BERGGREN. **FEBS Lett** 229:233-237, 1988.

61 Inhibition of glucose-stimulated insulin release by α_2-adrenoceptor activation is parallelled with both a repolarization and a reduction in cytoplasmic free Ca^{2+} concentration. T NILSSON, P ARKHAMMAR, P RORSMAN & P-O BERGGREN. **J Biol Chem** 263:1855-1860, 1988.

62 Effects of chronic sympathectomy on muscle fibre composition 1S0-myosin patterns, protein synthesis and calcium content in canine gracilis muscle. J KARLSSON, P CUMMINS, H J SMITH, P-O BERGGREN & T SAARTOK. **Clin Physiol** 8:181-191, 1988.

63 Direct determination of selenium in solid biological materials by graphite furnace atomic absorption spectrometry. I LINDBERG, E LUNDBERG, P ARKHAMMAR & P-O BERGGREN. **J Anat At Spectrom** 3:497-501, 1988.

64 Fluorimetric determination of aldose reductase in small tissue samples. S E BROLIN, P-O BERGGREN & P NAESER. **Anal Chim Acta** 206:357-361, 1988.

65 Dual effects of glucose on cytoplasmic free Ca^{2+} concentration and insulin release reflects the β-cell being deprived of fuel. T NILSSON, P ARKHAMMAR & P-O BERGGREN. **Biochem Biophys Res Commun** 153:984-991, 1988.

66 Measurements of membrane potential, transmembrane ^{45}Ca fluxes, cytoplasmic free Ca^{2+} concentration and insulin release by transplantable rat insulinoma cells maintianed in tissue culture. P R FLATT, H ABRAHAMSSON, P ARKHAMMAR, P-O BERGGREN, P RORSMAN & S K SWANSTON-FLATT. **Br J Cancer** 58:22-29, 1988.

67 Expression of K channels in *Xenopus leavis* oocytes injected with poly (A^+) mRNA from the insulin-secreting β-cell line, HIT T15. F M ASHCROFT, S J H ASHCROFT, P-O BERGGREN, C BETZHOLTZ, P RORSMAN, G TRUBE & M WELSH. **FEBS Lett** 239:185-189, 1989.

68 Glucose-induced changes in cytoplasmic free Ca^{2+} concentration and the significance for the regulation of insulin release. Measurements with fura 2 in suspensions and single aggregates of mouse pancreatic β-cells. P ARKHAMMAR, T NILSSON & P-O BERGGREN. **Cell Calcium** 10:17-27, 1989.

69 Suppression of insulin release by galanin and somatostatin is mediated by a G-protein; An effect involving repolarization and a reduction in cytoplasmic free Ca^{2+} concentration. T NILSSON, P ARKHAMMAR, P RORSMAN & P-O BERGGREN. **J Biol Chem** 264:973-980, 1989.

70 Glucose-stimulated efflux of Fura-2 in pancreatic β-cells is prevented by probenicid. P ARKHAMMAR, T NILSSON & P-O BERGGREN. **Biochem Biophys Res Commun** 159:223-228, 1989.

71 Transfection of insulin-producing cells with transforming c-Ha-ras oncogene stimulates phospholipase C activity. P-O BERGGREN, A HALLBERG, N WELSH, P ARKHAMMAR, T NILSSON & M WELSH. **Biochem J** 259:701-707, 1989.

72 Ontogeny of differentiation, growth and function of the pancreatic B-cell. N WELSH, Å SJÖHOLM, M WELSH, I SWENNE, P-O BERGGREN, P RORSMAN & C HELLERSTRÖM. **In Cellular and Biochemical Aspects of the Beta cell.** (Larkins R, Zimmet P & Chisholm D, eds). Elsevier Science Publishers BV (Biomedical Division) **Diabetes 1988.** 383-386, 1989.

73 Effects of dietary inorganic trivalent chromium (Cr^{3+}) on the development of glucose homeostatis in rats. P R FLATT, L JUNTTI-BERGGREN, P-O BERGGREN, B J GOULD & S K SWANSTON-FLATT. **Diab Metab (Paris)** 15:93-97, 1989.

74 Extracellular Ca^{2+} and cell cycle transitions: Effect of protein kinase C and $InsP_3$. A L BOYNTON, J ZWILLER, T D HILL, T NILSSON, P ARKHAMMAR & P-O BERGGREN. **Cell Calcium Metabolism** (FISKUM G, ed). Plenum Publishing Corporation 273-282, 1989.

75 Extracellular ATP mobilizes intracellular Ca^{2+} in T51B rat liver epitelial cells: a study involving single cell measurements. A L BOYNTON, R COONEY, T D HILL, T NILSSON & P-O BERGGREN. **Exp Cell Res** 181:245-255, 1989.

76 Does galanin inhibit insulin secretion by opening of the ATP-regulated K^+-channel in the β-cell? B AHREN, P-O BERGGREN, K BOKVIST & RORSMAN. **Peptides** 10:453-457, 1989.

77 Failure of glucose to elicit a normal secretory response in fetal pancreatic beta cells results from glucose insensitivity of the ATP-regulated K^+ channels. P RORSMAN, P ARKHAMMAR, K BOKVIST, C HELLERSTRÖM, T NILSSON, M WELSH, N WELSH & P-O BERGGREN. **Proc Natl Acad Sci USA** 86:4505-4509, 1989.

78 Failure of glucose tolerance factor-containing brewer's yeast to ameliorate spontaneous diabetes in C57BL/KsJ db/db mice. P R FLATT, L JUNTTI-BERGGREN, P-O BERGGREN, B J GOULD & S K SWANSTON-FLATT. **Diabetes Res** 10:147-151, 1989.

79 Mechanisms of action of calcitonin on secretion in rat submandibular gland. G-B SAGULIN, R N MULLER, A WESTLIND, T NILSSON, P-O BERGGREN & G M ROOMANS. **Acta Physiol Scand** 136:435-442, 1989.

80 Human interleukin 1β stimulates islet insulin release by a mechanism not dependent on changes in phospholipase C and protein kinase C activities or Ca^{2+} handling. N WELSH, T NILSSON, A HALLBERG, P ARKHAMMAR, P-O BERGGREN, M WELSH & S SANDLER. **Acta Endocrinol (Copenh)** 121:698-704, 1989.

81 Effects of protein kinase C activation on the regulation of the stimulus-secretion coupling in pancreatic β-cells. P ARKHAMMAR, T NILSSON, M WELSH, N WELSH & P-O BERGGREN. **Biochem J** 264:207-215, 1989.

82 Activation of protein kinase C assists insulin producing cells in recovery from raised cytoplasmic Ca^{2+} by stimulating Ca^{2+} efflux. P-O BERGGREN, P ARKHAMMAR & T NILSSON. **Biochem Biophys Res Commun** 165:416-421, 1989.

83 Glucose-inhibition of glucagon secretion involves activation of $GABA_A$ -receptor chloride channels. P RORSMAN, P-O BERGGREN, K BOKVIST, H ERICSON, H MÖHLER, C-G ÖSTENSON & PA SMITH. **Nature** 341:233-236, 1989.

84 Mechanisms of action of entero-insular hormones and neural input on the insulin secretory process. P-O BERGGREN, P RORSMAN, P ARKHAMMAR & T NILSSON. **Biochem Soc Trans** 18:119-122, 1989.

85 Extracellular ATP increases cytoplasmic free Ca^{2+} concentration in clonal insulin-producing RINm5F cells. A mechanism involving direct interaction with both release and refilling of the inositol 1,4,5-trisphosphate-sensitive Ca^{2+} pool. P ARKHAMMAR, A HALLBERG, H KINDMARK, T NILSSON, P RORSMAN & P-O BERGGREN. **Biochem J** 265:203-211, 1990.

86 Glucose in glucagon release. P RORSMAN, P-O BERGGREN & P A SMITH. **Nature** 344:716, 1990.

87 ATP-regulated K^+-channels and diabetes. P ROSMAN, P-O BERGGREN, K BOKVIST & S EFENDIC. **News in Physiol Sci** 5:143-147, 1990.

88 Delayed rectifying and calcium-activated K^+-channels and their significance for action potential repolarization in mouse pancreatic β-cells. P A SMITH, K BOKVIST, P ARKHAMMAR, P-O BERGGREN & P RORSMAN. **J Gen Physiol** 95:1041-1059, 1990.

89 Glucose cycling is markedly enhanced in pancreatic islets of obese hyperglycemic mice. A KHAN, V CHANDRAMOULI, C-G ÖSTENSON, P-O BERGGREN, H LÖW, BR LANDAU & S EFENDIC. **Endocrinology** 126:2413-2416, 1990.

90 Expression of voltage-gated K^+ channels in insulin-producing cells: Analysis by polymerase chain reaction. C BETSHOLTZ, A BAUMANN, S KENNA, F M ASHCROFT, S J H ASHCROFT, P-O BERGGREN, A GRUPE, O PONGS, P RORSMAN, J SANDBLOM & M WELSH. **FEBS Lett** 263:121-126, 1990.

91 An inositol 1,4,5-trisphosphate-sensitive Ca^{2+} pool in liver nuclei. P NICOTERA, S ORRENIUS, T NILSSON & P-O BERGGREN. **Proc Natl Acad Sci USA** 87:6858-6862, 1990.

92 Glucose-stimulated efflux of indo-1 from pancreatic β-cells is reduced by probenecid. P ARKHAMMAR, T NILSSON & P-O BERGGREN. **FEBS Lett** 273:182-184, 1990.

93 Coexpression of the platelet-derived growth factor (PDGF) B chain and PDGF B chain and the PDGF β receptor in isolated pancreatic islet cells stimulates DNA synthesis. M WELSH, L CLAESSON-WELSH, A HALLBERG, N WELSH, C BETSHOLTZ, P ARKHAMMAR, T NILSSON, C-H HELDIN & P-O BERGGREN. **Proc Natl Acad Sci USA** 87:5807-5811, 1990.

94 Diabetes is not associated with a change in the elemental composition of the pancreatic B-cell in diabetic C57BL KsJ-*db/b* mice. L JUNTTI-BERGGREN, U LINDH, P-O BERGGREN, O BERGLUND & BJ FRANKEL. **Biosci Rep** 10:217-223, 1990.

95 Interaction with the inositol 1,4,5-trisphosphate receptor promotes Ca^{2+} sequestration in permeabilised insulin-secreting cells. Md S ISLAM, T NILSSON, P RORSMAN & P-O BERGGREN. **FEBS Lett** 288:27-29, 1991.

96 Measurements of cytoplasmic free Ca^{2+} concentration in human pancreatic islets and insulinoma cells. H KINDMARK, M KÖHLER, T NILSSON, P ARKHAMMAR, K-L WIECHEL, P RORSMAN, S EFENDIC & P-O BERGGREN. **FEBS Lett** 91:310- 314, 1991.

97 Activation by adrenaline of a low-conductance G protein-dependent K^+-channel in mouse pancreatic β-cells. P RORSMAN, K BOKVIST, C ÄMMÄLÄ, P ARKHAMMAR, P-O BERGGREN, O LARSSON & K WÅHLANDER. **Nature** 349:77-79, 1991.

98 Inositol trisphosphate-dependent periodic activation a Ca^{2+}-activated K^+ conductance in glucose-stimulated pancreatic β-cells. C ÄMMÄLÄ, O LARSSON, P-O BERGGREN, K BOKVIST, L JUNTTI-BERGGREN, H KINDMARK & P RORSMAN. **Nature** 353:849-852, 1991.

99 Mechanisms involved in the regulation of the insulin secretory process. S EFENDIC, H KINDMARK & P-O BERGGREN. **J Internal Med** 229:9-22, 1991.

100 Glucose-induced increase in cytoplasmic pH in pancreatic β-cells is mediated by Na^+/H^+ exchange, an effect not dependent on protein kinase C. L JUNTTI-BERGGREN, P ARKHAMMAR, T NILSSON, P RORSMAN & P-O BERGGREN. **J Biol Chem** 266:23537-23541, 1991.

101 Galanin inhibits β-cell electrical activity by a G-protein-regulated sulphonylurea-insensitive mechanism. K WÅHLANDER, C ÄMMÄLÄ, P-O BERGGREN, K BOKVIST, L JUNTTI-BERGGREN & P RORSMAN. **In:** (T Hökfelt, ed) **Wenner-Gren International Symposium Series.** Chapter 17:237-245, 1991.

102 Nuclear microscopy and the application to diabetes research. U LINDH, T SUNDE, L JUNTTI-BERGGREN, P-O BERGGREN & E PÅLSGÅRD. **Nuclear Instruments and Methods in Physics Research** B56/57:1279-1283, 1991.

103 Neuropeptides in the regulation of islet hormone secretion - localization, effects and mode of action. **In: The nervous system and fuel homeostasis.** B AHREN, P-O BERGGREN, P RORSMAN, C-G ÖSTENSON & S EFENDIC. 1st Toronto-Stockholm symposium on Perspectives in Diabetes Research. (Vranic M, Efendic S and Hollenberg CH, eds), New York, Raven Press. 129-142, 1991.

104 Regulation of insulin release: studies employing the patch-clamp technique and fluorescent probes. P-O BERGGREN & P RORSMAN. Reprinted from **Cell Signalling:** Experimental Strategies (E Reid, GMW Cook & JP Luzio, eds) Royal Society of Chemistry Redwood Press Limited, Melksham, Wiltshire, Great Britain 233-246, 1991.

105 Aspects of insulin release in NIDDM. S EFENDIC, P-O BERGGREN, A KHAN & C-G ÖSTENSON. In: (H Rifkin, JA Colwell & SI Taylor eds). **Diabetes 1991.** Elesevier Science Publishers B.V. 169-172, 1991.

106 Influence of phenytoin on cytoplasmic free Ca^{2+} level in human gingival fibroblasts. T MODEER, G BRUNIUS, C MENDEZ, L JUNTTI-BERGGREN & P-O BERGGREN. **Scand J Dent Res** 99:310-315, 1991.

107 Separate processes mediate nucleotide-induced inhibiton and stimulation of the ATP-regulated K^+-channels in mouse pancreatic β-cells. K BOKVIST, C ÄMMÄLÄ, F ASHCROFT, P-O BERGGREN, O LARSSON & P RORSMAN. **Proc R Soc Lond B** 243:139-144, 1991.

108 Regulation of glucagon release from pancreatic A-cells. P RORSMAN, FM ASHCROFT & P-O BERGGREN. **Biomed Pharmacol** 41:1783-1790, 1991.

109 Characterization of the solubilized glibenclamide receptor in a hamster pancreatic β-cell line, HIT T15. I NIKI, M WELSH, P-O BERGGREN, P HUBBARD & SJH ASHCROFT. **Biochem J** 277:619-624, 1991.

110 Somatostatin promotes accumulation of phospholipids in regenerating liver tissue of rats. C MILIN, B RADOSEVIC-STASIC, M KIRGIN, V HINIC, D RUKAVINA, P-O BERGGREN & S EFENDIC. **Biosci Rep** 11:1-6, 1991.

111 Starvation is associated with changes in elemental composition of the pancreatic β-cell. L JUNTTI-BERGGREN, U LINDH & P-O BERGGREN. **Biosci Rep** 11:73-84, 1991.

112 Quantification of glucose cycling and the extent of equilibration of glucose 6-phosphate with fructose 6-phosphate in islets from ob/ob mice. V CHANDRAMOULI, A KHAN, C-G ÖSTENSON, P-O BERGGREN, H LÖW, BR LANDAU & S EFENDIC. **Biochem J** 278:353-359, 1991.

113 Alpha$_2$-adrenoreceptor stimulation does not inhibit L-type calcium channels in mouse pancreatic β-cells. K BOKVIST, C ÄMMÄLÄ, P-O BERGGREN, P RORSMAN & K WÅHLANDER. **Biosci Rep** 11:147-157, 1991.

114 Elemental composition in the pancreatic B cell is normal in the prediabetic chinese hamster. L JUNTTI-BERGGREN, U LINDH, P-O BERGGREN & BJ FRANKEL. **Pancreas** 7:11-14, 1992.

115 Protein kinase C activity affects glucose-induced oscillations in cytoplasmic free Ca^{2+} in the pancreatic B-cell. H KINDMARK, M KÖHLER, S EFENDIC, P RORSMAN, O LARSSON & P-O BERGGREN. **FEBS Lett** 303:85-90, 1992.

116 Inhibition of L-type calcium channels by internal GTP [γS] in mouse pancreatic β-cells. C ÄMMÄLÄ, P-O BERGGREN, K BOKVIST & P RORSMAN. **Pflügers Arch** 420:72-77, 1992.

117 Mechanisms of action of entero-insular hormones and neural input on the insulin secretory process. P-O BERGGREN, P RORSMAN, S EFENDIC, C-G ÖSTENSON, P FLATT, T NILSSON, P ARKHAMMAR & L JUNTTI-BERGGREN In: (PR Flatt, ed) **Nutrient regulation of insulin secretion.** Portland Press. Chapter 14:289-318, 1992.

118 Defective insulin secretion in diabetes and insulinoma. PR FLATT, CJ BAILEY, P-O BERGGREN, L HERBERG & SK FLATT. In: (PR Flatt, ed) **Nutient regulation of insulin secretion.** Portland Press. Chapter 16:341-386, 1992.

119 Ca^{2+}-induced Ca^{2+} release in insulin-secreting cells. Md S ISLAM, P RORSMAN & P-O BERGGREN. **FEBS Lett** 296:287-291, 1992.

120 Reglering av insulinsekretionen. P-O BERGGREN & C HELLERSTRÖM. In: (C-D Agardh, C Berne & J Östman, eds). **Diabetes**. Almqvist & Wiksell Förlag AB. Chapter 4:38-49, 1992.

121 Intracellular pH and the stimulus-secretion coupling in insulin-producing RINm5F cells. L JUNTTI-BERGGREN, P RORSMAN, W SIFFERT & P-O BERGGREN. **Biochem J** 287:59-66, 1992.

122 Electrical bursting in islet B-cells. P RORSMAN & P-O BERGGREN. **Nature** 357:28, 1992.

123 Novel calcium-binding proteins: Fundamental and clinical implication. CW Heizmann ed. Springer Verlag; Berlin. P-O BERGGREN. **FEBS Lett** 303:97-98, 1992.

124 Cytoplasmic calcium transients due to single action potentials and voltage-clamp depolarization in mouse pancreatic B-cells. P RORSMAN, C ÄMMÄLÄ, P-O BERGGREN, K BOKVIST & O LARSSON. **EMBO J** 11:2877-2884, 1992.

125 Bradykinin induces B2 receptor-mediated calcium signal linked to prostanoid formation in human gingival fibroblasts *in vitro*. U H LERNER, G BRUNIUS, I ANDUREN, P-O BERGGREN, L JUNTTI-BERGGREN & T MODEER. **Agents Action** 37:44-52, 1992.

126 Glucocorticoid increases glucose cycling and inhibits insulin release in pancreatic islets of ob/ob mice. A KHAN, C-G ÖSTENSON, P-O BERGGREN & S EFENDIC. **Am J Physiol** 263:E663-E666, 1992.

127 Induction of intracellular adhesion molecule-1 (CD54) on isolated mouse pancreatic β cells by inflammatory cytokines. J PRIETO, EE KAAYA, L JUNTTI-BERGGREN, P-O BERGGREN, S SANDLER, P BIBERFELD & M PATARROYO. **Clin Immunol Immunopathol** 65:247-253, 1992.

128 Mobilization of Ca^{2+} by thapsigargin and 2,5-di-(t-butyl)-1,4-benzohydroquinone in permeabilized insulin-secreting RINm5F cells: evidence for separate uptake and release compartments in inositol 1,4,5-trisphosphate-sensitive Ca^{2+} pool. Md S ISLAM & P-O BERGGREN. **Biochem J** 293:423-429, 1993.

129 Increased activity of L-type Ca^{2+}-channels exposed to serum from patients with type 1 diabetes. L JUNTTI-BERGGREN, O LARSSON, P RORSMAN, C ÄMMÄLÄ, K BOKVIST, K WÅHLANDER, P NICOTERA, J DYPBUKT, S ORRENIUS, A HALLBERG & P-O BERGGREN. **Science** 261:86-90, 1993.

130 Enhanced stimulus-secretion coupling in polyamine-depleted rat insulinoma cells. An effect involving increased cytoplasmic Ca^{2+}, inositol phosphate generation and phorbol ester sensitivity. Å SJÖHOLM, P ARKHAMMAR, N WELSH, K BOKVIST, P RORSMAN, A HALLBERG, T NILSSON, M WELSH & P-O BERGGREN. **J Clin Invest** 92:1910-1917, 1993.

131 Regulation of cytoplasmic free Ca^{2+} in insulin-secreting cells. P-O BERGGREN, P ARKHAMMAR, Md S ISLAM, L JUNTTI-BERGGREN, A KHAN, H KINDMARK, M KÖHLER, K LARSSON, O LARSSON, T NILSSON, Å SJÖHOLM, J SZECOWKA & Q ZHANG. In New Concepts in the pathogenesis of NIDDM - 2nd Toronto-Stockholm symposium in Diabetes Research (Östenson C-G, Efendic S & Vranic M eds) **Adv Exp Med Biol** 334:24-45, 1993 Plenum Press, New York.

132 Cyclic ADP-ribose in β-cells. Md S ISLAM, O LARSSON & P-O BERGGREN. **Science** 262:584-585, 1993.

133 Cyclic ADP-ribose and pancreatic β-cells. Md S ISLAM, O LARSSON & P-O BERGGREN. **Science** 262:1497, 1993.

134 Characterization of serine/threonine protein phosphatases in RINm5F insulinoma cells. Å SJÖHOLM, R E HONKANEN & P-O BERGGREN. **Biosci Rep** 13:349-358, 1993.

135 Sulfhydryl oxidation induces rapid and reversible closure of the ATP-regulated K^+-channel in the pancreatic β-cell. MS ISLAM, P-O BERGGREN & O LARSSON. **FEBS Lett** 319:128-132, 1993.

136 Polyaminer vid hälsa och sjukdom. Å SJÖHOLM & P-O BERGGREN. **Läkartidningen** 90:1651-1654, 1993.

137 Demonstration of a novel apamine-insensitive calcium-activated K^+ channel in mouse pancreatic B-cells. C ÄMMÄLÄ, P-O BERGGREN, K BOKVIST, O LARSSON & P RORSMAN. **Pflügers Arch** 422:443-448, 1993.

138 Modifications of Ca^{2+} signaling by inorganic mercury in PC12 cells. AD ROSSI, O LARSSON, L MANZO, S ORRENIUS, M VAHTER, P-O BERGGREN & P NICOTERA. **FASEB J** 7:1507-1514, 1993.

139 Simultaneous oscillations of cytoplasmic free Ca^{2+} concentration and Ins (1,4,5)P_3 concentration in mouse pancreatic β-cells. C J BARKER, T NILSSON, C J KIRK, R H MICHELL & P-O BERGGREN. **Biochem J** 297:265-268, 1994.

140 Protein kinase C modulates the insulin secretory process by maintaining a proper function of the β-cell voltage-activated Ca^{2+} channels. P ARKHAMMAR, L JUNTTI-BERGGREN, O LARSSON, M WELSH, E NÅNBERG, Å SJÖHOLM, M KÖHLER & P-O BERGGREN. **J Biol Chem** 269:2743-2749, 1994.

141 Inhibition of serine/threonine protein phosphatases promotes opening of voltage-activated L-type Ca^{2+} channels in insulin-secreting cells. C HABY, O LARSSON, Md S ISLAM, D AUNIS, P-O BERGGREN & J ZWILLER. **Biochem J** 298:341-346, 1994.

142 Ca^{2+} and pancreatic B-cell function. P-O BERGGREN & O LARSSON. **Biochem Soc Trans** 22:12-18, 1994.

143 Receptor-mediated Mn2+ influx in rat hepatocytes: comparison of cells loaded with Fura-2 ester and cells microinjected with Fura-2 salt. GEN KASS, D-L WEBB, SC CHOW, J LLOPIS & P-O BERGGREN**. Biochem J** 302:5-9, 1994.

144 Two separate plasma membrane Ca2+ carriers participate in receptor-mediated Ca2+ influx in rat hepatocytes. GEN KASS, SC CHOW, A GAHM, D-L WEBB, P-O BERGGREN, J LLOPIS & S ORRENIUS. **Biochim Biophys Acta** 1223:226-233, 1994.

145 The imidazoline derivate calmidazolium inhibits voltage-gated Ca^{2+}-channels and insulin release but has no effect on the phospholipase C system in insulin producing RINm5F-cells. H KINDMARK, M KÖHLER, P GERWINS, O LARSSON, A KHAN, A WAHL & P-O BERGGREN. **Biosci Rep** 14:145-158, 1994

146 Oscillations in cytoplasmic free calcium concentration in human pancreatic islets from subjects with normal and impaired glucose tolerance. H KINDMARK, M KÖHLER, P

ARKHAMMAR, S EFENDIC, O LARSSON, S LINDER, T NILSSON & P-O BERGGREN. **Diabetologia** 37:1121-1131, 1994.

147 New perspectives on the actions of sulphonylureas and hyperglycaemic sulphonamides on the pancreatic β-cell. PR FLATT, O SHIBIER, J SZECOWKA & P-O BERGGREN. **Diabete & Metabolisme (Paris)** 20:157-162, 1994.

148 Activation of protein kinases and inhibition of protein phosphatases play a central role in the regulation of exocytosis in mouse pancreatic β-cells. C ÄMMÄLÄ, L ELIASON, K BOKVIST, P-O BERGGREN, RE HONKANEN, Å SJÖHOLM & P RORSMAN. **Proc Natl Acad Sci USA** 91:4343-4347, 1994.

149 Glucose-stimulated increase in cytoplasmic pH precedes increase in free Ca^{2+} in pancreatic β-cells. A possible role for pyruvate. L JUNTTI-BERGGREN, VN CIVELEK, P-O BERGGREN, V SCHULTZ, BE CORKEY & K TORNHEIM. **J Biol Chem** 269:14391-14395, 1994.

150 Identification of synaptic proteins and their isoform mRNAs in compartments of pancreatic endocrine cells. G JACOBSSON, AJ BEAN, RH SCHELLER, L JUNTTI-BERGGREN, JT DEENEY, P-O BERGGREN & B MEISTER. **Proc Natl Acad Sci USA** 91:12487-12491, 1994.

151 Regulation of intracellular pH in the pancreatic B-cell. L JUNTTI-BERGGREN, M KÖHLER, BE CORKEY, K TORNHEIM & P-O BERGGREN. In: **Insulin Secretion and Pancreatic B-cell Research** (FLATT PR & LENZEN S eds). Smith-Gordon,

UK, pp.145-151, 1994.

152 Molecular mechanisms involved in regulating cytoplasmic free Ca^{2+} concentration in pancreatic B-cells. P-O BERGGREN, P ARKHAMMAR, Md S ISLAM, L JUNTTI-BERGGREN, H KINDMARK, M KÖHLER, O LARSSON, T NILSSON, J SZECOWKA & Q ZHANG. In: **Insulin Secretion and Pancreatic B-cell Research** (FLATT PR & LENZEN S eds). Smith-Gordon UK, pp. 201-211, 1994.

153 Proton-induced and electron-induced X-ray microanalysis of insulin-secreting cells. E PÅLSGÅRD, U LINDH, L JUNTTI-BERGGREN, P-O BERGGREN, GM ROOMANS & GW GRIME. **Scanning Microscopy Supplement** 8: 325-333, 1994.

154 Inositol 1,2,3-trisphosphate and inositol 1,2- and/or 2,3-bisphosphate are normal constituents of mammalian cells. CJ BARKER, PJ FRENCH, AJ MOORE, T NILSSON, P-O BERGGREN, CM BUNCE, CJ KIRK & RH MICHELL. **Biochem J** 306:557-564, 1995.

155 Effects of K^+-induced depolarization and purinergic receptor activation on elemental content in insulin-producing RINm5F-cells. E PÅLSGÅRD, U LIND, L JUNTTI-BERGGREN, P-O BERGGREN & GM ROOMANS. **Cell Biol Int** 19:25-34, 1995.

156 Effects of caffeine on cytoplasmic free Ca^{2+} concentration in pancreatic β-cells are mediated by interaction with ATP-sensitive K^+-channels and L-type voltage-gated Ca^{2+}-channels but not the ryanodine receptor. Md S ISLAM, O LARSSON, T NILSSON & P-O BERGGREN. **Biochem J** 306:679-686, 1995.

157 Interleukin 1β-induced stimulation of insulin release in mouse pancreatic islets is related to diacylglycerol production and protein kinase C activation. DL EIZIRIK, S SANDLER, N WELSH, L JUNTTI-BERGGREN & P-O BERGGREN. **Mol Cell Endocrinol** 111:159-165, 1995.

158 Dissociation between exocytosis and Ca^{2+}-channel activity in mouse pancreatic β-cells stimulated with calmidazolium (compound R24571). H KINDMARK, M KÖHLER, O LARSSON, A KHAN & P-O BERGGREN. **FEBS Lett** 369:315-320, 1995.

159 Products of γ-tocopherol reaction with NO_2 and their formation in rat insulinoma (RINm5F) cells. RV COONEY, PJ HARWOOD, AA FRANKE, K NARALA, A-K SUNDSTRÖM, P-O BERGGREN & LJ MORDAN. **Free Rad Biol Med** 19:259-269, 1995.

160 Inhibition of serine/threonine protein phosphatases by secretagogues in insulin-secreting cells. Å SJÖHOLM, RE HONKANEN & P-O BERGGREN. **Endocrinology** 136:3391-3397, 1995.

161 Dissociation between changes in cytoplasmic free Ca^{2+} concentration and insulin secretion as evidenced from measurements in single mouse pancreatic islet. SV ZAITSEV, S EFENDIC, P ARKHAMMAR, AM BERTORELLO & P-O BERGGREN. **Proc Natl Acad Sci USA** 92:9712-9716, 1995.

162 A sensitive method for measurements of luminiscence in single cells. M KÖHLER, S NORGREN, BB FREDHOLM, O LARSSON, H LUTHMAN & P-O BERGGREN. **Zoological Studies** 34:191-194, 1995.

163 Temporal patterns of changes in ATP/ADP ratio, glucose-6-phosphate and cytoplasmic free Ca^{2+} in glucose-stimulated pancreatic β-cells. T NILSSON, V SCHULTZ, P-O BERGGREN, BE CORKEY & K TORNHEIM. **Biochem J** 314:91-94, 1996.

164 PKC-dependent stimulation of exocytosis by sulfonylureas in voltage-clamped pancreatic β-cells. L ELIASSON, E RENSTRÖM, C ÄMMÄLÄ, P-O BERGGREN, AM BERTORELLO, K BOKVIST, A CHIBALIN, JT DEENEY, PR FLATT, J GÄBEL, J GROMADA, O LARSSON, P LINDSTRÖM, CJ RHODES & P RORSMAN. **Science** 271:813-815, 1996.

165 Activation of the ATP-sensitive K^+ channel by long chain Acyl CoA: A role in modulation of pancreatic β-cell glucose sensitivity. O LARSSON, JT DEENEY, R BRÄNSTRÖM, P-O BERGGREN & BE CORKEY. **J Biol Chem** 271:10623-10626, 1996.

166 A fatty acid-induced decrease in pyruvate dehydrogenase activity is an important determinant of β-cell dysfunction in the obese diabetic db/db mouse. Y-P ZHOU,

P-O BERGGREN & V GRILL. **Diabetes** 45:580-586**,** 1996.

167 Oscillations in K_{ATP} channel activity promote oscillations in cytoplasmic free Ca^{2+} concentration in the pancreatic β-cell. O LARSSON, H KINDMARK, R BRÄNSTRÖM, B FREDHOLM & P-O BERGGREN. **Proc Natl Acad Sci USA** 93:5161-5165, 1996.

168 Fluorescence-activated cell sorted rat islet cells and studies of the insulin secretory process. K JOSEFSEN, JP STENVANG, H KINDMARK, P-O BERGGREN, T HORN, T KJAER & K BUSCHARD. **J Endocrinol** 149:145-154, 1996.

169 Impaired coupling of glucose signal to the exocytotic machinery in diabetik GK rats; a defect ameliorated by cAMP. SM ABDEL-HALIM, A GUENIFI, A KHAN, O LARSSON, P-O BERGGREN, C-G ÖSTENSON & S EFENDIC. **Diabetes** 45:934940, 1996.

170 Reversible Ca^{2+}-dependent translocation of protein kinase C and glucose-induced insulin release. JT DEENEY, BA CUNNINGHAM, S CHHEDA, K BOKVIST, L JUNTTI-BERGGREN, K LAM, HM KORCHAK, BE CORKEY & P-O BERGGREN. **J Biol Chem** 271:18154-18160, 1996.

171 Insulin exocytosis and glucose-mediated increase in cytoplasmic free Ca^{2+} concentration in the pancreatic β-cell are independent of cyclic ADP ribose. D-L WEBB, Md. S ISLAM, AM EFANOV, G BROWN, M KÖHLER, O LARSSON & P-O BERGGREN. **J Biol Chem** 271:19074-19079, 1996.

172 Imidazoline compounds stimulated insulin release by inhibition of K_{ATP} channels and interaction with the exocytotic machinery. SV ZAITSEV, AM EFANOV, IB EFANOVA, O LARSSON, C-G ÖSTENSON, G GOLD, P-O BERGGREN & S EFENDIC. **Diabetes** 45:1610-1618, 1996

173 Morphological and functional characteristics of the different cell types in the stria vascularis: a comparison between cells obtained from fresh tissue preparations and cells cultured in vitro. C ÅGRUP, P-O BERGGREN, M KÖHLER, M-L SPÅNGBERG & D BAGGER-SJÖBÄCK. **Hearing Research** 102:155-166, 1996.

174 Thiol oxidation by 2,2´-dithiodipyridine causes a reversible increase in cytoplasmic free Ca^{2+} concentration in pancreatic β-cells. Md S ISLAM, H KINDMARK, O LARSSON & P-O BERGGREN. **Biochem J** 321:347-353, 1997.

175 Inositol hexakisphosphate stimulates non-Ca^{2+}-mediated and primes Ca^{2+}-mediated exocytosis of insulin by activation of protein kinase C. AM EFANOV, SV ZAITSEV & P-O BERGGREN. **Proc Natl Acad Sci USA**. 94:4435-4439, 1997.

176 Galparan, a powerful insulin releasing chimeric peptide acting at a novel site. C-G ÖSTENSON, S ZAITSEV, P-O BERGGREN & S EFENDIC. **Endocrinology** 138:3308-3313, 1997.

177 Insulin-like growth factor II signalling through the insulin-like growth factor II/mannose-6-phosphate receptor promotes exocytosis in insulin-secreting cells. Q ZHANG, M TALLY, O LARSSON, RT KENNEDY, L HUANG, K HALL & P-O BERGGREN. **Proc Natl Acad Sci USA** 94:6232-6237, 1997.

178 Parallel changes in nuclear and cytosolic calcium in mouse pancreatic β-cells. GR BROWN, M KÖHLER & P-O BERGGREN. **Biochem J** 325:0771-0778, 1997.

179 RIN14B: a pancreatic δ-cell line that maintains functional ATP-dependent K^+ channels and capability to secrete insulin under conditions where it no longer secretes somatostatin. R BRÄNSTRÖM, A HÖÖG, MA WAHL, P-O BERGGREN & O LARSSON. **FEBS Lett** 411:301-307, 1997.

180 Evidence for a unique long chain acyl-CoA ester binding site on the ATP-regulated potassium channel in mouse pancreatic beta cells. R BRÄNSTRÖM, BE CORKEY, P-O BERGGREN & O LARSSON. **J Biol Chem** 272:17390-17394, 1997.

181 Glucose increases both the plasma membrane number and phosphorylation of insulin-like growth factor II/Mannose 6-phosphate receptors. Q ZHANG, P-O BERGGREN & M TALLY. **J Biol Chem** 272:23703-23706, 1997.

182 Inhibition of phosphatases and increased Ca^{2+} channel activity by inositol hexakisphosphate. O LARSSON, CJ BARKER, Å SJÖHOLM, H CARLQVIST, RH MICHELL, A BERTORELLO, T NILSSON, RE HONKANEN, GW MAYR, J ZWILLER & P-O BERGGREN. **Science** 278:471-474, 1997.

183 Perorala antidiabetikas verkningsmekanism: Sulphonylureapreparat stänger ATP-reglerad kaliumkanal. O LARSSON, H KINDMARK, R BRÄNSTRÖM & P-O BERGGREN. **Läkartidningen** 94:4473-4476, 1997.

184 Delayed Ca^{2+} response to glucose in diabetic GK rat. S ZAITSEV, I EFANOVA, C-G ÖSTENSON, S EFENDIC & P-O BERGGREN. **Biochem Biophys Res Commun** 239:129-133, 1997.

185 Ca^{2+} channel blockers verapamil and nifedipine inhibit apoptosis induced by 25-hydroxycholesterol in human aortic smooth muscle cells. MPS ARES, MI PÖRN-ARES, J THYBERG, L JUNTTI-BERGGREN, P-O BERGGREN, U DICZFALUSY, B KALLIN, I BJÖRKHEM, S ORRENIUS & J NILSSON. **J Lipid Res** 38:2049- 2061, 1997.

186 Cyclic ADP-ribose and the pancreatic beta cell: where do we stand? MS ISLAM & P-O BERGGREN. **Diabetologia** 40:1480-1484, 1997.

187 Receptor-mediated inhibition of renal Na^+-K^+-ATPase is associated with endocytosis of its α- and β-subunits. AV CHIBALIN, AI KATZ, P-O BERGGREN & AM BERTORELLO. **Am J Physiol** 273 (Cell Physiol 42): C1458-1465, 1997.

188 Mechanisms of insulin secretion and action. P-O BERGGREN. **Clinical Courier** 16: no 27, 14-15, 1997.

189 Evidence against a direct effect of leptin on glucose transport in skeletal muscle and adipocytes. R ZIERATH, EU FREVERT, JW RYDER, P-O BERGGREN & BB KAHN. **Diabetes** 47:1-4, 1998.

190 RX871024 induces Ca^{2+} mobilization from thapsigargin-sensitive stores in mouse pancreatic β-cells. IB EFANOVA, SV ZAITSEV, G BROWN, P-O BERGGREN & S EFENDIC. **Diabetes** 47:211-218, 1998.

191 Insulin-like growth factor II inhibits glucose-induced insulin exocytosis. Q ZHANG, P-O BERGGREN, O LARSSON, K HALL, & M TALLY. **Biochem Biophys Res Commun** 243:117-121, 1998.

192 Phosphorylation of the catalyic α-subunit constitutes a triggering signal for N^+, K^+-ATPase endocytosis. AV CHIBALIN, CH PEDEMONTE, AI KATZ, E FÉRAILLE, P-O BERGGREN & AM BERTORELLO. **J Biol Chem** 273:8814-8819, 1998.

193 *In situ* activation of the type 2 ryanodine receptor in pancreatic beta cells requires cAMP-dependent phosphorylation. Md ISLAM, I LEIBIGER, B LEIBIGER, D ROSSI, V SORRENTINO, TJ EKSTRÖM, H WESTERBLAD, FH ANDRADE & P-O BERGGREN. **Proc Natl Acad Sci USA** 95:6145-6150, 1998.

194 Phosphatidylinositol 3-kinase-mediated endocytosis of renal Na^+, K^+-ATPase α subunit in response to dopamine. AV CHIBALIN, JR ZIERATH, AI KATS, P-O BERGGREN & AM BERTORELLO. **Mol Biol Cell** 9:1209-1220, 1998.

195 Direct inhibition of the pancreatic β-cell ATP-regulated potassium channel by α-ketoisocaproate. R BRÄNSTRÖM, S EFENDIC, P-O BERGGREN & O LARSSON. **J Biol Chem** 273:14113-14118, 1998.

196 Exocytosis of insulin promotes insulin gene transcription via the insulin receptor/PI-3 kinase/p70 s6 kinase and CaM kinase pathways. IB LEIBIGER, B LEIBIGER, T MOEDE & P-O BERGGREN. **Mol Cell** 1:933-938, 1998.

197 Short-term regulation of insulin gene transcription by glucose. B LEIBIGER, T MOEDE, T SCHWARZ, GR BROWN, M KÖHLER, IB LEIBIGER & P-O BERGGREN. **Proc Natl Acad Sci USA** 95:9307-9312, 1998.

198 Cell signaling by the type IV pili of pathogenetic neisseria. H KÄLLSTRÖM, Md S ISLAM, P-O BERGGREN & A-B JONSSON. **J Biol Chem** 273:21777-21782, 1998.

199 Signaling and sites of interaction for RX-871024 and sulfonylurea in the stimulation of insulin release. AM EFANOV, SV ZAITSEV, IB EFANOVA, S ZHU, C-G ÖSTENSON, P-O BERGGREN & S EFENDIC. **Am J Physiol** 274:E751-E757, 1998.

200 Cysteine string protein (CSP) is and insulin secretory granule-associated protein regulating β-cell exocytosis. H BROWN, O LARSSON, R BRÄNSTRÖM, S-N YANG, B LEIBIGER, I LEIBIGER, G FRIED, T MOEDE, JT DEENEY, GR BROWN, G JACOBSSON, CJ RHODES, JEA BRAUN, RH SCHELLER, BE CORKEY, P-O BERGGREN & B MEISTER. **EMBO J** 17:5048-5058, 1998.

201 Long chain coenzyme A esters activate the pore forming subunit (Kir6.2) of the ATP-regulated potassium channel. R BRÄNSTRÖM, IB LEIBIGER, B LEIBIGER, BE CORKEY, P-O BERGGREN & O LARSSON**. J Biol Chem** 273:31395-31400, 1998.

202 Effects of imidazoline derivative RX871024 on insulin, glucagon, and somatostatin secretion from isolated perfused rat pancreas. IB EFANOVA, SV ZAITSEV, AM EFANOV, C-G ÖSTENSON, A RAAP, H-J MEST, P-O BERGGREN & S EFENDIC. **Biochem Biophys Res Commun** 252:162-165, 1998.

203 An endogenous peptide isolated from the gut, NK-lysin, stimulates insulin secretion without changes in cytosolic free Ca^{2+} concentration. SV ZAITSEV, M ANDERSSON, AM EFANOV, P-O BERGGREN, V MUTT & S EFENDIC. **FEBS Lett** 439:267-270, 1998.

204 X-ray microanalysis of in situ and isolated pancreatic islets. R WRÓBLEWSKI, E PÅLSGÅRD, L JUNTTI-BERGGREN, P-O BERGGREN & GM ROOMANS. **Pancreas** 16:134-140, 1998.

205 Glucose and tolbutamide induce apoptosis in mouse pancreatic β-cells; a process dependent on intracellular Ca^{2+} concentration. IB EFANOVA, SV ZAITSEV, B ZHIVOTOVSKY, M KÖHLER, S EFENDIC, S ORRENIUS & P-O BERGGREN. **J Biol Chem** 273:33501-33507, 1998.

206 Changes in cytoplasmic ATP concentration parallels changes in ATP-regulated K^+-

channel activity in insulin-secreting cells. M KÖHLER, S NORGREN, P-O BERGGREN, BB FREDHOLM, O LARSSON, CJ RHODES, TP HERBERG & H LUTHMAN. **FEBS Lett** 441:97-102, 1998.

207 Insulin-like growth factor-I-induced DNA synthesis in insulin secreting cell line RINm5F is associated with phosphorylation of the insulin-like growth factor-1 receptor and the insulin receptor substrate-2. Q ZHANG, P-O BERGGREN, A HANSSON & M TALLY. **J Endocrinol** 156:573-581, 1998.

208 Dopamine-induced endocytosis of Na^+,K^+-ATPase is initiated by phosphorylation of Ser-18 in the rat α subunit and is responsible for the decreased activity in epithelial cells. AV CHIBALIN, G OGIMOTO, CH PEDEMONTE, TA PRESSLEY, AI KATZ, E

FÉRAILLE, P-O BERGGREN & AM BERTORELLO**. J Biol Chem** 274:1920-1927, 1999.

209 Glucose decreases Na^+,K^+-ATPase activity in pancreatic β-cells. An effect mediated via Ca^{2+}-independent phospholipase A_2 and protein kinase C-dependent phosphorylation of the α-subunit. S OWADA, O LARSSON, P ARKHAMMAR, AI KATZ, AV CHIBALIN, P-O BERGGREN & AM BERTORELLO. **J Biol Chem** 274:2000-2008, 1999.

210 A low voltage-activated Ca^{2+} current mediates cytokine-induced pancreatic β-cell death. L WANG, A BHATTACHARJEE, Z ZUO, F HU, RE HONKANEN, P-O BERGGREN & M LI. **Endocrinology** 140:1200-1204, 1999.

211 The stimulatory action of tolbutamide on Ca^{2+}-dependent exocytosis in pancreatic β cells is mediated by a 65-kDa mdr-like P-glycoprotein. S BARG, E RENSTRÖM, P-O BERGGREN, A BERTORELLO, K BOKVIST, M BRAUN, L ELIASSON, WE HOLMES, M KÖHLER, P RORSMAN & F THÉVENOD. **Proc Natl Acad Sci USA** 96:5539-5544, 1999.

212 Ca^{2+} - an important signal in the insulin-secretory process. P-O BERGGREN & M KÖHLER. **Parameter News** no 1: 7 and 13, 1999.

213 Effects of dynorphins on free cytoplasmic calcium concentration and insulin release in ob/ob mouse pancreatic β-cells. SV ZAITSEV, IB EFANOVA, AM EFANOV & P-O BERGGREN. In: **Peptides Science – Present and Future** (SHIMONISHI Y, ed), Kluwer Academic Publishers, Great Britain, pp 183-184, 1999.

214 Syntaxin 1 interacts with the L_D subtype of voltage-gated Ca^{2+} channels in pancreatic β cells. S-N YANG, O LARSSON, R BRÄNSTRÖM, AM BERTORELLO, B LEIBIGER, IB LEIBIGER, T MOEDE, M KÖHLER, B MEISTER & P-O BERGGREN. **Proc Natl Acad Sci USA** 96:10164-10169, 1999.

215 Different modes of action of the imidazoline compound RX871024 in pancreatic β-cells. SV ZAITSEV, AM EFANOV, A RAAP, IB EFANOVA, J SCHLOSS, B STECKEL-HAMANN, O LARSSON, C-G ÖSTENSON, P-O BERGGREN, H-J MEST & S EFENDIC. In: **Imidazoline Receptors and Their Endogenous Ligands**. Annals of the New York Academy of Sciences 881:241-252, 1999.

216 Inositol hexakisphosphate and β-cell stimulus-secretion coupling. CJ BARKER & P-O BERGGREN. **Anticancer Res** 19:3737-3742, 1999.

217 Identification of a nuclear localization signal, RRMKWKK, in the homeodomain transcription factor PDX-1. T MOEDE, B LEIBIGER, H GHANAAT POUR, P-O BERGGREN & IB LEIBIGER. **FEBS Lett** 461:229-234, 1999.

218 Cloning of a T-type Ca^{2+} channel isoform in insulin-secreting cells. H ZHUNG, A BHATTACHARJEE, F HU, M ZHANG T GOSWAMI, L WANG, S WU, P-O BERGGREN & M LI. **Diabetes** 49:59-64, 2000.

219 Acute stimulation with long chain acyl-CoA enhances exocytosis in insulin-secreting cells (HIT T-15 and NMRI β-cells). JT DEENEY, J GROMADA, M HØY, HL OLSEN, CJ RHODES, M PRENTKI, P-O BERGGREN & BE CORKEY. **J Biol Chem** 275: 9363-9368, 2000.

220 Synaptotagmin III isoform is compartmentalized in pancreatic β-cells and has a functional role in exocytosis. H BROWN, B MEISTER, J DEENEY, BE CORKEY, S-N YANG, O LARSSON, CJ RHODES, S SEINO, P-O BERGGREN & G FRIED. **Diabetes** 49:383-391, 2000.

221 G protein-coupled receptors regulate Na^+-K^+-ATPase activity and endocytosis by modulating the recruitment of adaptor protein 2 and clathrin. G OGIMOTO, GA YUDOWSKI, CJ BARKER, M KÖHLER, AI KATZ, E FÉRAILLE, CH PEDEMONTE, P-O BERGGREN & AM BERTORELLO. **Proc Natl Acad Sci USA** 97:3242-3247, 2000.

222 Phosphoinositide-3 kinase binds to a proline-rich motif in the Na^+, K^+-ATPase α subunit and regulates its trafficking. GA YUDOWSKI, R EFENDIEV, CH PEDEMONTE, AI KATZ, P-O BERGGREN & AM BERTORELLO. **Proc Natl Acad Sci USA** 97:6556-6561, 2000.

223 Rapid Ca^{2+} influx and diacylglycerol synthesis in growth hormone-mediated islet β-cell mitogenesis. Å SJÖHOLM, Q ZHANG, N WELSH, A HANSSON, O LARSSON, M TALLY & P-O BERGGREN. **J Biol Chem** 275:21033-21040, 2000.

224 Glucose-stimulated insulin biosynthesis depends on insulin-stimulated insulin gene transcription. B LEIBIGER, K WÅHLANDER, P-O BERGGREN & IB LEIBIGER. **J Biol Chem** 275:30153-30156, 2000.

225 γ-Tocopherol partially protects insulin-secreting cells against functional inhibition by nitric oxide. Å SJÖHOLM, P-O BERGGREN & RV COONEY. **Biochem Biophys Res Commun** 277:334-340, 2000.

226 Phosphatidylinositol 4,5-bisphosphate and ATP-sensitive potassium channel regulation. O LARSSON, CJ BARKER & P-O BERGGREN. **Diabetes** 49:1409-1412, 2000.

227 Impaired insulin secretion and β-cell loss in tissue-specific knockout mice with mitochondrial diabetes. JP SILVA, M KÖHLER, C GRAFF, A OLDFORS, MA AGNUSSON, P-O BERGGREN & N-G LARSSON. **Nature Genetics** 26:336-340, 2000.

228 7β-Hydroxycholesterol induces Ca^{2+} oscillations, MAP kinase activation and apoptosis in human aortic smooth muscle cells. MPS ARES, MI PÖRN-ARES, S MOSES, J

THYBERG, L JUNTTI-BERGGREN, P-O BERGGREN, A HULTGÅRDH-NILSSON, B KALLIN & J NILSSON. **Atherosclerosis** 153:23-35, 2000.

229 Munc-18 associates with syntaxin and serves as a negative regulator of exocytosis in the pancreatic β-cell. W ZHANG, A EFANOV, S-N YANG, G FRIED, S KÖLARE, H BROWN, S ZAITSEV, P-O BERGGREN & B MEISTER. **J Biol Chem** 275:41521-41527, 2000.

230 Phentolamine inhibits exocytosis of glucagon by G_{i2} protein-dependent activation of calcineurin in rat pancreatic α-cells. M HØJ, K BOKVIST, W XIAO-GANG, J HANSEN, K JUHL, P-O BERGGREN, K BUSCHARD & J GROMADA. **J Biol Chem** 276:924-930, 2001.

231 Polyamines in pancreatic islets of obese-hyperglycemic *(ob/ob)* mice of different ages. Å SJÖHOLM, P ARKHAMMAR, P-O BERGGREN & A ANDERSSON. **Am J Physiol Cell Physiol** 280:C317-C323, 2001.

232 Online monitoring of stimulus-induced gene expression in pancreatic β-cells. T MOEDE, B LEIBIGER, P-O BERGGREN & IB LEIBIGER. **Diabetes** 50:S15-19, 2001.

233 Role of apoptosis in pancreatic β-cell death in diabetes. J CHANDRA, B ZHIVOTOVSKY, S ZAITSEV, L JUNTTI-BERGGREN, P-O BERGGREN & S ORRENIUS. **Diabetes** 50:S44-S47, 2001.

234 Imidazoline compounds protect against interleukin 1β-induced βcell apoptosis. SV ZAITSEV, IB APPELSKOG, IL KAPELIOUKH, S-N YANG, M KÖHLER, S EFENDIC & P-O BERGGREN. **Diabetes** 50:S70-S76, 2001.

235 Effects of serum from patients with type 1 diabetes on primary cerebellar granule cells. J CHANDRA, S-N YANG, M KÖHLER, S ZAITSEV, L JUNTTI-BERGGREN, P-O BERGGREN, B ZHIVOTOVSKY & S ORRENIUS. **Diabetes** 50:S77-S81, 2001.

236 Imidazoline RX871024 raises diacylglycerol levels in rat pancreatic islets. AM EFANOV, SV ZAITSEV, P-O BERGGREN, H-J MEST & S EFENDIC. **Biochem Biophys Res Commun** 281:1070-1073, 2001.

237 Selective insulin signaling through A and B insulin receptors regulates transcription of insulin- and glucokinase-genes in pancreatic β-cells. B LEIBIGER, IB LEIBIGER, T MOEDE, S KEMPER, RN KULKARNI, CR KAHN, L MOITOS DE VARGAS &

P-O BERGGREN. **Mol Cell** 7:559-570, 2001.

238 Ca^{2+}-induced Ca^{2+} release from the endoplasmic reticulum amplifies the Ca^{2+} signal mediated by activation of voltage-gated L-type Ca^{2+} channels in pancreatic β-cell. R LEMMENS, O LARSSON, P-O BERGGREN & Md. S ISLAM. **J Biol Chem**

276:9971-9977, 2001.

239 The novel imidazoline compound BL11282 potentiates glucose-induced insulin secretion in pancreatic β-cells in the absence of modulation of K_{ATP} channel activity. AM EFANOV, SV ZAITSEV, H-J MEST, A RAAP, IB APPELSKOG, O LARSSON P-O BERGGREN & S EFENDIC. **Diabetes** 50:797-802, 2001.

240 Overexpression of rat neuronal calcium sensor-1 in rodent NG108-15 cells enhances synapse formation and transmission. X-L CHEN, Z-G ZHONG, S YOKOYAMA, C BARK, B MEISTER, P-O BERGGREN, J RODER, H HIGASHIDA & A JEROMIN. **J Physiol** 532.3:649-659, 2001.

241 Effects of second messengers on serine/threonine protein phosphatases in insulin-secreting cells. Å SJÖHOLM, P-O BERGGREN & RE HONKANEN. **Biochem Biophys Res Commun** 283:364-368, 2001.

242 Inositol hexakisphosphate increases L-type Ca^{2+} channel activity by stimulation of adenylyl cyclase. S-N YANG, J YU, GW MAYR, F HOFMANN, O LARSSON & P-O BERGGREN. **FASEB J** 15:1753-1763, 2001.

243 The imidazoline RX871024 stimulates insulin secretion in pancreatic β-cells from mice deficient in K_{ATP} channel function. AM EFANOV, M HØY, R BRÄNSTRÖM, SV ZAITSEV, MA MAGNUSON, S EFENDIC, J GROMADA & P-O BERGGREN. **Biochem Biophys Res Commun** 284:918-922, 2001.

244 Glucose-induced oscillations in cytoplasmic free Ca^{2+} concentration precede oscillations in mitochondrial membrane potential in the pancreatic β-cell. H KINDMARK, M KÖHLER, G BROWN, R BRÄNSTRÖM, O LARSSON & P-O BERGGREN. **J Biol Chem** 276:34530-34536, 2001.

245 Cyclin-dependent kinase 5 promotes insulin exocytosis. L LILJA, S-N YANG, D-L WEBB, L JUNTTI-BERGGREN, P-O BERGGREN & C BARK. **J Biol Chem** 276:34199-34205, 2001.

246 Glucose-induced metabolic oscillations parallel those of Ca^{2+} and insulin release in clonal insulin-secreting cells. JT DEENEY, M KÖHLER, K KUBIK, G BROWN, V SCHULTZ, K TORNHEIM, BE CORKEY & P-O BERGGREN. **J Biol Chem** 276:36946-36950, 2001.

247 Defective nephrin trafficking caused by missense mutations in the NPHS1 gene: insight into the mechanisms of congenital nephrotic syndrome. L LIU, S COTTA DONÉ, J KHOSHNOODI, A BERTORELLO, J WARTIOVAARA, P-O BERGGREN & K TRYGGVASON. **Hum Mol Genet** 10:2637-2644, 2001.

248 Altered dopaminergic transmission in the anorexic anx/anx mouse striatum. JE JOHANSEN, V LUCAS TEIXEIRA, C JOHANSSON, P SERRÃO, P-O BERGGREN, P SOARES-DA-SILVA, M SCHALLING & AM BERTORELLO. **Neuro Report** 12: 2737-2741, 2001.

249 Insulinotropic activity of the imidazoline derivative RX871024 in the diabetic GK rat. AM EFANOV, IB APPELSKOG, SM ABDEL-HALIM, A KHAN, R BRÄNSTRÖM, O LARSSON, C-G ÖSTENSON, H-J MEST, P-O BERGGREN, S EFENDIC & SV ZAITSEV. **Am J Physiol Endocrinol Metab** 282:E117-E124, 2002.

250 Short-term regulation of insulin gene transcription. B LEIBIGER, T MOEDE, S UHLES, P-O BERGGREN & IB LEIBIGER. **Biochem Soc Trans** 30:312-317, 2002.

251 Down-regulated expression of exocytotic proteins in pancreatic islets of diabetic GK rats, W ZHANG, A KHAN, C-G ÖSTENSON, P-O BERGGREN, S EFENDIC, B MEISTER. **Biochem Biophys Res Commun** 291:1038-1044, 2002.

252 Tyrosine 537 within the Na^+, K^+-ATPase α-subunit is essential for AP-2 binding and clathrin-dependent endocytosis. S COTTA DONÉ, IB LEIBIGER, R EFENDIEV, AI KATZ, B LEIBIGER, P-O BERGGREN, CH PEDEMONTE & AM BERTORELLO. **J Biol Chem** 277: 17108-1711, 2002.

253 Inositol hexakisphosphate promotes dynamin I-mediated endocytosis. M HØJ, AM EFANOV, AM BERTORELLO, SV ZAITSEV, HL OLSEN, K BOKVIST, B LEIBIGER. IB LEIBIGER, J ZWILLER, P-O BERGGREN & J GROMADA. **Proc Natl Acad Sci USA** 99: 6773-6777, 2002.

254 Modulation of L-type Ca^{2+} channels by distinct domains within SNAP-25. J JI, S-N YANG, X HUANG, X LI, L SHEU, N DIAMANT, P-O BERGGREN & HY GAISANO. **Diabetes** 51: 1425-1436, 2002.

255 Sulfonylurea receptor type 1 knock-out mice have intact feeding-stimulated insulin secretion despite marked impairment in their response to glucose. C SHIOTA, O LARSSON, KD SHELTON, M SHIOTA, AM EFANOV, M HÖY, J LINDNER, S KOOPTIWUT, L JUNTTI-BERGGREN, J GROMADA, P-O BERGGREN & MA MAGNUSON. **J Biol Chem** 277: 37176-37183, 2002.

256 Proinsulin C-peptide and its analogues induce intracellular Ca^{2+} increases in human renal tubular cells. J SHAFQAT, L JUNTTI-BERGGREN, Z ZHONG, K EKBERG, M KÖHLER, P-O BERGGREN, J JOHANSSON, J WAHREN & H JÖRNVALL. **Cell Mol Life Sci** 59: 1185-1189, 2002.

257 Relevance of dopamine signals anchoring dynamin-2 to the plasma membrane during Na^+, K^+-ATPase endocytosis. R EFENDIEV, GA YUDOWSKI, J ZWILLER, B LEIBIGER, AI KATZ, P-O BERGGREN, CH PEDEMONTE, IB LEIBIGER & A BERTORELLO. **J Biol Chem** 277: 44108-44114, 2002.

258 Phosphorylated inositol compounds in beta cell stimulus-response coupling. CJ BARKER, IB LEIBIGER, B LEIBIGER & P-O BERGGREN. **Am J Physiol Endocrinol Metab** 283: E1113-E1122, 2002.

259 Increase in cellular glutamate levels stimulates exocytosis in pancreatic β-cells. M HØY, P MAECHLER, AM EFANOV, CB WOLLHEIM, P-O BERGGREN & J GROMADA. **FEBS Lett** 531: 199-203, 2002.

260 Insulin feedback action on pancreatic β-cell function. IB LEIBIGER, B LEIBIGER & P-O BERGGREN. **FEBS Lett** 532: 1-6, 2002.

261 Glucose metabolites inhibit protein phosphatases and directly promote insulin exocytosis in pancreatic β-cells. Å SJÖHOLM, M LEHTIHET, AM EFANOV, SV ZAITSEV, P-O BERGGREN & RE HONKANEN. **Endocrinology** 143: 4592-4598, 2002.

262 Two generations of insulinotrophic imidazoline compounds. S EFENDIC, AM EFANOV, P-O BERGGREN & SV ZAITSEV. **Diabetes** 51: S448-S454, 2002.

263 Reglering av insulinsekretionen. P-O BERGGREN & C HELLERSTRÖM. In **Diabetes** (Agardh CD, Berne C & Östman J eds). Liber AB, pp. 38-50, 2002.

264 SUR1 regulates PKA-independent cAMP-induced granule priming in mouse pancreatic B-cell. L ELIASSON, X MA, E RENSTRÖM, S BARG, P-O BERGGREN, J GALVANOVSKIS, J GROMADA, Z JING, I LUNDQUIST, A SALEHI, S SEWING & P RORSMAN. **J Gen Physiol** 121: 181-197, 2003.

265 Phosphatidylinositol 4-kinase serves as a metabolic sensor and regulates priming of secretory granules in pancreatic β cells. HL OLSEN, M HØY, W ZHANG, AM BERTORELLO, K BOKVIST, K CAPITO, AM EFANOV, B MEISTER, P THAMS, S-N YANG, P RORSMAN, P-O BERGGREN & J GROMADA. **Proc Natl Acad Sci USA** 100: 5187-5192, 2003.

266 Suppression of β cell energy metabolism and insulin release by PGC-1α. JC YOON, G XU, JT DEENEY, S-N YANG, J RHEE, P PUIGSERVER, AR LEVENS, R YANG, C-Y ZHANG, BB LOWELL, P-O BERGGREN, CB NEWGARD, S BONNER-WEIR, G WEIR & BM SPIEGELMAN. **Developmental Cell** 5: 73-83, 2003.

267 Glibenclamide inhibits islet carnitine palmitoyltransferase 1 activity, leading to PKC-dependent insulin exocytosis. M LEHTIHET, N WELSH, P-O BERGGREN, GA COOK & Å SJÖHOLM. **Am J Physiol Endocrinol Metab** 285: E438-E446, 2003.

268 Signal-transduction in the pancreatic β-cell. P-O BERGGREN. Proceedings of the 2003 Miami Nature Biotechnology Winter Symposium, Miami, **In Miami Nature Biotechnology Short Reports** 14:101, 2003.

269 Sulfonylureas rapidly cross phospholipid bilayer membranes by a free-diffusion mechanism. F KAMP, N KIZILBASH, BE CORKEY, P-O BERGGREN & JA HAMILTON. **Diabetes** 52: 2526-2531, 2003.

270 On-line monitoring of apoptosis in insulin-secreting cells. M KÖHLER, SV ZAITSEV, II ZAITSEVA, B LEIBIGER, IB LEIBIGER, M TURUNEN, IL KAPELIOUKH, L

BAKKMAN, IB APPELSKOG, J BOUTET DE MONVEL, G IMREH & P-O BERGGREN. **Diabetes** 52: 2943-2950, 2003.

271 Involvement of protein kinase C-ε in inositol hexakisphosphate-induced exocytosis in mouse pancreatic β-cells. M HØY, P-O BERGGREN & J GROMADA. **J Biol Chem** 278: 35168-35171, 2003.

272 Dihydroxyacetone-induced oscillations in cytoplasmic free Ca^{2+} and the ATP/ADP ratio in pancreatic β-cells at substimulatory glucose. L JUNTTI-BERGGREN, D-L WEBB, POG ARKHAMMAR, V SCHULTZ, EKH SCHWEDA, K TORNHEIM & P-O BERGGREN. **J Biol Chem** 278: 40710-40716, 2003.

273 Rapid association of protein kinase C-ε with insulin granules is essential for insulin exocytosis. CF MENDEZ, IB LEIBIGER, B LEIBIGER M HØY, J GROMADA, P-O BERGGREN & AM BERTORELLO. **J Biol Chem** 278: 44753-44757, 2003.

274 Cytosolic multiple inositol polyphosphate phosphatase in the regulation of cytoplasmic free Ca^{2+} concentration. J YU, B LEIBIGER, S-N YANG, JJ CAFFERY, SB SHEARS, IB LEIBIGER, CJ BARKER & P-O BERGGREN. **J Biol Chem** 278: 46210-46218, 2003.

275 Isoform-specific insulin receptor signalling involves different plasma membrane domains. S UHLES, T MOEDE, B LEIBIGER, P-O BERGGREN & IB LEIBIGER. **J Cell Biol** 163: 1327-1337, 2003.

276 Long-chain CoA esters activate human pancreatic beta-cell K_{ATP}-channels: potential role in type 2 diabetes. R BRÄNSTRÖM, CA ASPINWALL, S VÄLIMÄKI, C-G ÖSTENSON, A TIBELL, M ECKHARD, H BRANDHORST, BE CORKEY, P-O BERGGREN & O LARSSON. **Diabetologia** 47: 277-283, 2004.

277 Apolipoprotein CIII promotes Ca^{2+}-dependent β cell death in type 1 diabetes. L JUNTTI-BERGGREN, E REFAI, I APPELSKOG, M ANDERSSON, G IMREH, N DEKKI, S UHLES, L YU, WJ GRIFFITHS, S ZAITSEV, I LEIBIGER, S-N YANG, G OLIVECRONA, H JÖRNVALL & P-O BERGGREN. **Proc Natl Acad Sci USA** 101: 10090-10094, 2004.

278 Cyclin-dependent kinase 5 associated with p39 promotes Munc18-1 phosphorylation and Ca^{2+}-dependent exocytosis. L LILJA, JU JOHANSSON, J GROMADA, SA MANDIC, G FRIED, P-O BERGGREN & C BARK. **J Biol Chem** 279: 29534-29541, 2004.

279 Regulation of β-cell GK gene transcription by insulin. B LEIBIGER, P-O BERGGREN, IB LEIBIGER. In: **Glucokinase and Glycemic Disease: From Basics to Novel Therapeutics** (MATSCHINSKY FM, MAGNUSON MA, eds.) Front Diabetes. Basel, Karger, vol 16, pp 249-261, 2004.

280 Mint1, a Munc-18-interacting protein, is expressed in insulin-secreting β-cells. W ZHANG, L LILJA, C BARK, P-O BERGGREN & B MEISTER. **Biochem Biophys Res Commun** 320: 717-721, 2004.

281 Growth hormone promotes Ca^{2+}-induced Ca^{2+} release in insulin-secreting cells by ryanodine receptor tyrosine phosphorylation. Q ZHANG, M KÖHLER, S-N YANG, F ZHANG, O LARSSON & P-O BERGGREN. **Mol Endocrinol** 18: 1658-1669, 2004.

282 Removal of Ca^{2+} channel β_3 subunit enhances Ca^{2+} oscillation frequency and insulin exocytosis. P-O BERGGREN, S-N YANG, M MURAKAMI, AM EFANOV, S UHLES, M KÖHLER, T MOEDE, A FERNSTRÖM, IB APPELSKOG, CA ASPINWALL, SV ZAITSEV, O LARSSON, L MOITOSO DE VARGAS, C FECHER-TROST, P WEISSGERBER, A LUDWIG, B LEIBIGER, L JUNTTI-BERGGREN, CJ BARKER, J GROMADA, M FREICHEL, IB LEIBIGER & V FLOCKERZI. **Cell** 119: 273-284, 2004.

283 ATP-sensitive K^+ channel-dependent regulation of glucagons release and electrical activity by glucose in wild-type and $SUR1^{-/-}$ mouse α-cells. J GROMADA, X MA, M HØY, K BOKVIST, A SALEHI, P-O BERGGREN & P RORSMAN. **Diabetes** 53: S181-S189, 2004.

284 Imaging of pancreatic beta-cell signal-transduction. M KÖHLER, D NYQVIST, T MOEDE, H WAHLSTEDT, O CABRERA, I LEIBIGER & P-O BERGGREN. **Curr Med Chem – Immun Endoc & Metab Agents** 4: 281-299, 2004.

285 β-cell Ca_v channel regulation in physiology and pathophysiology. S-N YANG & P-O BERGGREN. **Am J Physiol Endocrinol Metab** 288: E16-E28, 2005.

286 $Ca_v2.3$ channel and PKCλ: new players in insulin secretion. S-N YANG & P-O BERGGREN. **J Clin Invest** 115: 16-20, 2005.

287 DARPP-32 and inhibitor-1 are expressed in pancreatic β-cells. L LILJA, B MEISTER, P-O BERGGREN & C BARK. **Biochem Biophys Res Commun** 329, 673-677, 2005.

288 Glucagon stimulates exocytosis in mouse and rat pancreatic α-cells by binding to glucagons receptors. X MA, Y ZHANG, J GROMADA, S SEWING, P-O BERGGREN, K BUSCHARD, A SALEHI, J VIKMAN, P RORSMAN & L ELIASSON. **Mol Endocrinol** 19: 198-212, 2005.

289 A novel method for the assessment of cellular composition and beta-cell viability in human islet preparations. H ICHII, L INVERARDI, A PILEGGI, RD MOLANO, O CABRERA, A CAICEDO, S MESSINGER, Y KURODA, P-O BERGGREN & C RICORDI. **Am J Transplant** 5: 1635-1645, 2005.

290 Pancreatic islet function in a transgenic mouse expressing fluorescent protein. D NYQVIST, G MATTSSON, M KÖHLER, V LEV-RAM, A ANDERSSON, P-O

CARLSSON, A NORDIN, P-O BERGGREN & L JANSSON. **J Endocrinol** 186: 333-341, 2005.

291 Donor islet endothelial cells participate in formation of functional vessels within pancreatic islet grafts. D NYQVIST, M KÖHLER, H WAHLSTEDT & P-O BERGGREN. **Diabetes** 54: 2287-2293, 2005.

292 Neuronal calcium sensor-1 potentiates glucose-dependent exocytosis in pancreatic β cells through activation of phosphatidylinositol 4-kinase β. J GROMADA, C BARK, K SMIDT, AM EFANOV, J JANSON, SA MANDIC, D-L WEBB, W ZHANG, B MEISTER, A JEROMIN & P-O BERGGREN. **Proc Natl Acad Sci USA** 102: 10303-10308, 2005.

293 Calcium has a permissive role in interleukin-1β-induced c-jun N-terminal kinase activation in insulin-secreting cells. J STØRLING, SV ZAITSEV, IL KAPELIOUKH, AE KARLSEN, N BILLESTRUP, P-O BERGGREN & T MANDRUP-POULSEN. **Endocrinology** 146: 3026-3036, 2005.

294 A SIRTain role in pancreatic β cell function. IB LEIBIGER & P-O BERGGREN. **Cell Metab** 2: 80-82, 2005.

295 Monomeric G-protein, Rhes, is not an imidazoline-regulated protein in pancreatic β-cells. VV SHAROYKO, II ZAITSEVA, M VARSANYI, N PORTWOOD, B LEIBIGER, I LEIBIGER, P-O BERGGREN, S EFENDIC & SV ZAITSEV. **Biochem Biophys Res Commun** 338: 1455-1459, 2005.

296 Transthyretin constitutes a functional component in pancreatic β-cell stimulus-secretion coupling. E REFAI, N DEKKI, S-N YANG, G IMREH, O CABRERA, L YU, G YANG, S NORGREN, SM RÖSSNER, L INVERARDI, C RICORDI, G OLIVECRONA, M ANDERSSON, H JÖRNVALL, P-O BERGGREN & L JUNTTI-BERGGREN. **Proc Natl Acad Sci USA** 102: 17020-17025, 2005.

297 Cyclin-dependent kinase 5 activators p35 and p39 facilitate formation of functional synapses. JU JOHANSSON, L LILJA, X-L CHEN, H HIGASHIDA, B MEISTER, M NODA, Z-G ZHONG, S YOKOYAMA, P-O BERGGREN & C BARK. **Mol Brain Res** 138: 215-227, 2005.

298 Reglering av insulinsekretionen. P-O BERGGREN & C HELLERSTRÖM. In **Diabetes** (Agardh CD, Berne C & Östman J eds). Liber AB, chapter 4: 38-50, 2005.

299 Sirt1: a metabolic master switch that modulates lifespan. I LEIBIGER & P-O BERGGREN. **Nature Medicine** 12: 34-36, 2006.

300 The unique cytoarchitecture of human pancreatic islets has implications for islet cell function. O CABRERA, DM BERMAN, NS KENYON, C RICORDI, P-O BERGGREN & A CAICEDO. **Proc Natl Acad Sci USA** 103: 2334-2339, 2006.

301 Tomosyn is expressed in β-cells and negatively regulates insulin exocytosis. W ZHANG, L LILJA, SA MANDIC, J GROMADA, K SMIDT, J JANSON, Y TAKAI, C BARK, P-O BERGGREN & B MEISTER. **Diabetes** 55: 574-581, 2006.

302 Novel aspects on signal-transduction in the pancreatic β-cell. P-O BERGGREN & IB LEIBIGER. **Nutrition Metabolism & Cardiovascular Diseases** 16: S7-S10, 2006.

303 RX871024 reduces NO production but does not protect against pancreatic β-cell death induced by proinflammatory cytokines. II ZAITSEVA, V SHAROYKO, J STØRLING, S EFENDIC, C GUERIN, T MANDRUP-POULSEN, P NICOTERA, P-O BERGGREN & SV ZAITSEV. **Biochem Biophys Res Commun** 347: 1121-1128, 2006.

304 The role of voltage-gated calcium channels in pancreatic β-cell physiology and pathophysiology. S-N YANG & P-O BERGGREN. **Endocrine Reviews** 27: 621-676, 2006.

305 Downregulation of EGF receptor signaling in pancreatic islets causes diabetes due to impaired postnatal β-cell growth. PJ MIETTINEN, J USTINOV, P ORMIO, R GAO, J PALGI, E HAKONEN, L JUNTTI-BERGGREN, P-O BERGGREN & T OTONKOSKI. **Diabetes** 55: 3299-3308, 2006.

306 Proinsulin C-peptide and insulin: Limited pattern similarities of interest in inter-peptide interactions but no C-peptide effect on insulin and IGF-1 receptor signaling. M HENRIKSSON, J JOHANSSON, T MOEDE, I LEIBIGER, J SHAFQAT, P-O BERGGREN & H JÖRNVALL. **Cell Mol Life Sci** 63: 3055-3060, 2006.

307 Selective gene activation by spatial segregation of insulin receptor B signaling. S UHLES, T MOEDE, B LEIBIGER, P-O BERGGREN & IB LEIBIGER. **FASEB J** 21: 1609-1621, 2007.

308 The biobreeding rat diabetes model is infected with Ljungan virus. B NIKLASSON, T HULTMAN, R KALLIES, M NIEDRIG, R NILSSON, P-O BERGGREN, L JUNTTI-BERGGREN, S EFENDIC, A LERNMARK, W KLITZ. **Diabetologia** 50:1559-1560, 2007.

309 R-type Ca^{2+}-channel-evoked CICR regulates glucose-induced somatostatin secretion. Q ZHANG, M BENGTSSON, C PARTRIDGE, A SALEHI, M BRAUN, R COX, L ELIASSON, PRV JOHNSON, E RENSTRÖM, T SCHNEIDER, P-O BERGGREN, S GÖPEL, FM ASHCROFT & P RORSMAN. **Nature Cell Biology** 9: 453-460, 2007.

310 Differential protein expression in pancreatic islets after treatment with an imidazoline compound. T JÄGERBRINK, H LEXANDER, C PALMBERG, J SHAFQAT, V SHAROYKO, P-O BERGGREN, S EFENDIC, S ZAITSEV & H JÖRNVALL. **Cell Mol Life Sci** 64: 1310-1316, 2007.

311 Single residue (K332A) substitution in Kir6.2 abolishes the stimulatory effect of long-chain acyl-CoA esters: indications for a long-chain acyl-CoA ester binding motif. R BRÄNSTRÖM, IB LEIBIGER, B LEIBIGER, G KLEMENT, J NILSSON, P ARHEM,

CA ASPINWALL, BE CORKEY, O LARSSON & P-O BERGGREN. **Diabetologia** 50:1670-1677, 2007.

312 Implantation site-dependent dysfunction of transplanted pancreatic islets. J LAU, G MATTSSON, C CARLSSON, D NYQVIST, M KÖHLER, P-O BERGGREN, L JANSSON & P-O CARLSSON. **Diabetes** 56:1544-1550, 2007.

313 Interference with tissue factor prolongs intrahepatic islet allograft survival in a nonhuman primate marginal mass model. DM BERMAN, O CABRERA, NM KENYON, J MILLER, SH TAM, VS KHANDEKAR, KM PICHA, AR SODERMAN RE JORDAN, PJ BUGELSKI, D HORNINGER, M LARK, JE DAVIS, R ALEJANDRO, P-O BERGGREN, M ZIMMERMAN, JJ O'NEIL, C RICORDI & NS KENYON. **Transplantation** 84: 308-315, 2007.

314 Glucose recruits K_{ATP} channels via non-insulin-containing dense-core granules. SN YANG, N DEKKI WENNA, J YU, G YANG, H QIU, L YU, L JUNTTI-BERGGREN, M KÖHLER & P-O BERGGREN. **Cell Metab** 6: 217-228, 2007.

315 Rolf Luft (1914-2007). P-O BERGGREN & K BRISMAR. **Cell Metab** 6: 162-163, 2007.

316 Tissue-dependent loss of phosphofructokinase-M in mice with interrupted activity of the distal promoter: impairment in insulin secretion. A-MT RICHARD, D-L WEBB, JM GOODMAN, V SCHULTZ, JN FLANAGAN, L GETTY-KAUSHIK, JT DEENEY, GC YANEY, GA DUNAWAY, P-O BERGGREN & K TORNHEIM. **Am J Physiol Endocrinol Metab** 293: E794-E801, 2007.

317 ^{3}H-serotonin as a marker of oscillatory insulin secretion in clonal β-cells (INS-1). JT DEENEY, R BRÄNSTRÖM, BE CORKEY, O LARSSON & P-O BERGGREN. **FEBS Lett** 581: 4080-4084, 2007.

318 Distribution of intraportally implanted microspheres and fluorescent islets in mice. E VON SETH, D NYQVIST, A ANDERSSON, P-O CARLSSON, M KÖHLER, G MATTSSON, A NORDIN, P-O BERGGREN & L JANSSON.**Cell Transplant** 16: 621-627, 2007.

319 Arachidonic acid signaling is involved in the mechanism of imidazoline-induced K_{ATP} channel-independent stimulation of insulin secretion. VV SHAROYKO, II ZAITSEVA, B LEIBIGER, S EFENDIC, P-O BERGGREN & SV ZAITSEV. **Cell Mol Life Sci** 64: 2985-2993, 2007.

320 An autocrine insulin feedback loop maintains pancreatic β-cell 3-phosphorylated inositol lipids. J YU, P-O BERGGREN & CJ BARKER. **Mol Endocrinol** 21: 2775-2784, 2007.

321 Requirement of inositol pyrophosphates for full exocytotic capacity in pancreatic β-cells. C ILLIES, J GROMADA, R FIUME, B LEIBIGER, J YU, K JUHL, S-N YANG, DK

BARMA, JR FALCK, A SAIARDI, CJ BARKER & P-O BERGGREN. **Science** 318: 1299-1302, 2007.

322 Type 1 diabetic serum interferes with pancreatic β-cell Ca^{2+}-handling. N DEKKI, R NILSSON, S NORGREN, SM RÖSSNER, I APPELSKOG, C MARCUS, O SIMELL, A PUGLIESE, R ALEJANDRO, C RICORDI, P-O BERGGREN & L JUNTTI-BERGGREN. **Biosci Rep** 27: 321-326, 2007.

323 Automated, high-througout assays for evaluation of human pancreatic islet function. O CABRERA, MC JACQUES-SILVA, DM BERMAN, A FACHADO, F ECHEVERRI, R POO, A KHAN, NS KENYON, C RICORDI, P-O BERGGREN & A CAICEDO. **Cell Transplant** 16: 1039-1048, 2008.

324 Non-invasive *in vivo* imaging of pancreatic islet cell biology. S SPEIER, D NYQVIST, O CABRERA, J YU, RD MOLANO, A PILEGGI, T MOEDE, M KOHLER, J WILBERTZ, B LEIBIGER, C RICORDI, IB LEIBIGER, A CAICEDO & P-O BERGGREN. **Nature Medicine** 14: 574-578, 2008.

325 Insulin signaling in the pancreatic beta-cell. IB LEIBIGER, B LEIBIGER & P-O BERGGREN. **Annu Rev Nutrition** 28: 233-251, 2008.

326 The imidazoline RX871024 induces death of proliferating insulin-secreting cells by activation of c-jun N-terminal kinase. II ZAITSEVA, J STORLING, T MANDRUP-POULSEN, P-O BERGGREN & SV ZAITSEV. **Cell Mol Life Sci** 65:1248-1255, 2008

327 A key role for phosphorylated inositol compounds in pancreatic beta-cell stimulus-secretion coupling. P-O BERGGREN & CJ BARKER. **Advances in Enzyme Regulation** 48:276-294, 2008.

328 Cyclin-Dependent Kinase 5 and Insulin Secretion. C BARK, M RUPNIK, M JEVSEK, SA MANDIC & P-O BERGGREN. In: **Cyclin Dependent Kinase 5 (Cdk 5)** (NY IP and LH TSAI, eds.) Publisher Springer, pp 145-158, 2008.

329 Glutamate is a positive autocrine signal for glucagon release. O CABRERA, MC JACQUES-SILVA, S SPEIER, S-N YANG, M KÖHLER, A FACHADO, E VIEIRA, JR ZIERATH, R KIBBEY, DM BERMAN, NS KENYON, C RICORDI, A CAICEDO & P-O BERGGREN. **Cell Metab** 7: 545-554, 2008.

330 Professor Rolf Luft 1914-2007. P-O BERGGREN & K BRISMAR. **Diabetologia**, 51: 697-699, 2008.

331 Activin B receptor ALK7 is a negative regulator of pancreatic β-cell function. P BERTOLINO, R HOLMBERG, E REISSMANN, O ANDERSSON, P-O BERGGREN & CF IBÁNEZ. **Proc Natl Acad Sci USA** 105:7246-7251, 2008.

332 Noninvasive high-resolution *in vivo* imaging of cell biology in the anterior chamber of the mouse eye. S SPEIER, D NYQVIST, M KÖHLER, A CAICEDO, IB LEIBIGER & P-O BERGGREN. **Nature Protocols** 3:1278-1286, 2008.

333 An ancient duplication of exon 5 in the Snap25 gene is required for complex neuronal development/function. JU JOHANSSON, J ERICSSON, J JANSON, S BERAKI, D STANIC, SA MANDIC, MA WIKSTRÖM, T HÖKFELT, SO ÖGREN, B ROZELL, P-O BERGGREN & C BARK. **PLoS Genetics** 4:1-15, e1000278, 2008.

334 Real-time monitoring of apoptosis by caspase-3-like protease induced FRET reduction triggered by amyloid aggregation. JF PAULSSON, SW SCHULTZ, M KÖHLER, I LEIBIGER, P-O BERGGREN & GT WESTERMARK. **Experimental Diabetes Research** doi:10.1155/2008/865850.

335 Proteins in the insulin-secreting cell line MIN6 bind the imidazoline compound BL11282. J SHAFQAT, M ISHRAT, T JÄGERBRINK, R SILLARD, U MÄEORG, S EFENDIC, P-O BERGGREN, SV ZAITSEV, H JÖRNVALL. **FEBS Lett** 582: 1613-1617, 2008.

336 Suramin inhibits the CD40-CD154 costimulatory interaction: A possible mechanism for immunosuppressive effects. E MARGOLLES-CLARK, MC JACQUES-SILVA, L GANESAN, O UMLAND, NS KENYON, C RICORDI, P-O BERGGREN & P BUCHWALD. **Biochem Pharmacol** 77: 1236-1245, 2009.

337 Pulling force generated by interacting SNAREs facilitates membrane hemifusion. MH ABDULREDA, A BHALLA, F RICO, P-O BERGGREN, ER CHAPMAN & VT MOY. **Integr Biol** 1: 301-310, 2009.

338 Suppressor of cytokine signaling-1 inhibits caspase activation and protects from cytokine-induced beta cell death. I I ZAITSEVA, M HULTCRANTZ, V SHAROYKO, M FLODSTRÖM-TULLBERG, SV ZAITSEV & P-O BERGGREN. **Cell Mol Life Sci** 66: 3787-3795, 2009.

339 Antiviral treatments reduce severity of diabetes in Ljungan virus-infected CD-1 mice and delay onset in diabetes-prone BB rats. R HOLMBERG, W KLITZ, M BLIXT, P-O BERGGREN, L JUNTTI-BERGGREN & B NIKLASSON. **Microbiol Immunol** 53: 567-572, 2009.

340 Inositol pyrophosphates: structure, enzymology and function. CJ BARKER, C ILLIES, GC GABOARDI & P-O BERGGREN. **Cell Mol Life Sci** 66: 3851-3871, 2009.

341 Diphosphoinositol pentakisphosphate as a novel mediator of insulin exocytosis. CJ BARKER, C ILLIES, R FIUME, GC GABOARDI, J YU & P-O BERGGREN. **Advances in Enzyme Regulation** 49: 168-173, 2009.

342 Beneficial role of pancreatic microenvironment for angiogenesis in transplanted pancreatic islets. J LAU, C KAMPF, G MATTSSON, D NYQVIST, M KÖHLER, P-O BERGGREN & P-O CARLSSON. **Cell Transplant** 18: 23-30, 2009.

343 Nephrin is expressed on the surface of insulin vesicles and facilities glucose-stimulated insulin release. A FORNONI, J JEON, JV SANTOS, L COBIANCHI, A JAUREGUI, L INVERARDI, SA MANDIC, C BARK, K JOHNSON, G MCNAMARA, A PILEGGI, RD MOLANO, J REISER, K TRYGGVASON, D KERJASCHKI, P-O BERGGREN, P MUNDEL & C RICORDI. **Diabetes** 59:190-199, 2010.

344 Insulin-feedback *via* PI3K-C2α activated PKBα/Akt1 is required for glucose-stimulated insulin secretion. B LEIBIGER, T MOEDE, S UHLES, CJ BARKER, M CREVEAUX, J DOMIN, P-O BERGGREN & IB LEIBIGER. **FASEB J** 24: 1824-1837, 2010.

345 Diphosphoinositol polyphosphates and energy metabolism: Assay for ATP/ADP ratio. A NAGEN, CJ BARKER, P-O BERGGREN, C ILLIES. **In: Inositol Phosphates and Lipids: Methods and Protocols** (ed. CJ Barker). Humana Press Methods in Molecular Biology 645: 123-131, 2010.

346 The role of inositol and the principals of labeling, extraction and analysis of inositides in mammalian cells. CJ BARKER & P-O BERGGREN. **In: Inositol Phosphates and Lipids: Methods and Protocols**. (ed. CJ Barker). Humana press Methods in Molecular Biology 645: 1-19, 2010.

347 HPLC separation of inositol polyphosphates. CJ BARKER, C ILLIES & P-O BERGGREN. **In: Inositol Phosphates and Lipids: Methods and Protocols**. (ed. CJ Barker). Humana press Methods in Molecular Biology 645: 21-46, 2010.

348 ATP-gated $P2X_3$, receptors constitute a positive autocrine signal for insulin release in the human pancreatic beta cell. MC JACQUES-SILVA, M CORREA-MEDINA, O CABRERA, R RODRIGUEZ-DIAZ, N MAKEEVA, A FACHADO, J DIEZ, DM BERMAN, NS KENYON, C RICORDI, A PILEGGI, RD MOLANO, P-O BERGGREN & A CAICEDO. **Proc Natl Acad Sci USA**, 107: 6465-6470, 2010.

349 Novel aspects on pancreatic beta-cell signal-transduction. IB LEIBIGER, K BRISMAR & P-O BERGGREN. **Biochem Biophys Res Commun** 396: 111-115, 2010.

350 Cholinergic augmentation of insulin release requires ankyrin-B. JA HEALY, KR NILSSON, HE HOHMEIER, J BERGLUND, J DAVIS, J HOFFMAN, M KOHLER, L-S LI, P-O BERGGREN, CB NEWGARD & V BENNETT. **Science Signaling,** 3 (113), ra 19.[DOI:10.1126/scsignal.2000771], 2010.

351 Lipotoxicity and decreased islet graft survival. CB LEITÃO, K BERNETTI, T THARAVANIJ, P CURE, V LAURIOLA, P-O BERGGREN, C RICORDI, R ALEJANDRO. **Diabetes Care** 33: 658-660, 2010.

352 Interleukin-6 signaling in liver-parenchymal cells suppresses hepatic inflammation and improves systemic insulin action. FT WUNDERLICH, P STRÖHLE, AC KÖNNER, S

GRUBER, S TOVAR, HS BRÖNNEKE, L JUNTTI-BERGGREN, L-S LI, N VAN ROOIJEN, C LIBERT, P-O BERGGREN & JC BRÜNING. **Cell Metab** 12: 237-249, 2010.

353 Electrical short-circuit in β-cells from a patient with non-insulinoma pancreatogenous hypoglycemic syndrome (NIPHS): a case report. R BRÄNSTRÖM, E BERGLUND, P CURMAN, L FORSBERG, A HÖÖG, L GRIMELIUS, P-O BERGGREN, P MATTSSON, P HELLMAN & L JUNTTI-BERGGREN. **J Medical Case Report** 4: 315, 2010.

354 The anterior chamber of the eye as a clinical transplantation site for the treatment of diabetes. VL PEREZ, A CAICEDO, DM BERMAN, E ARRIETA, MH ABDULREDA, R RODRIGUEZ-DIAZ, A PILEGGI, E HERNANDEZ, SR DUBOVY, JM PAREL C RICORDI, NM KENYON, NS KENYON & P-O BERGGREN. **Diabetologia** 54: 1121-1126, 2011.

355 Short telomeras comprise β-cell signaling and survival. N GUO, EM PARRY, L-S LI, F KEMBOU, N LAUDER, MA HUSSAIN, P-O BERGGREN & M ARMANIOS. **PLoS ONE** 6: doi: 10.1371/journal.pone.0017858, 2011.

356 Alpha cells secrete acetylcholine as a non-neuronal paracrine signal priming human beta cell function. R RODRIGUEZ-DIAZ, R DANDO, MC JACQUES-SILVA, A FACHADO, J MOLINA, M ABDULREDA, C RICORDI, SD ROPER, P-O BERGGREN & A CAICEDO. **Nature Medicine** 17: 888-892, 2011.

357 Innervation patterns of autonomic axons in the human endocrine pancreas. R RODRIGUEZ-DIAZ, MH ABDULREDA, AL FORMOSO, I GANS, C RICORDI, P-O BERGGREN & A CAICEDO. **Cell Metab** 14:45-54, 2011.

358 Lowering apolipoprotein CIII delays onset of type 1 diabetes. R HOLMBERG, E REFAI, A HÖÖG, RM CROOKE, M GRAHAM, G OLIVECRONA, P-O BERGGREN & L JUNTTI-BERGGREN. **Proc Natl Acad Sci USA** 108: 10685-10689, 2011.

359 High-resolution, non-invasive longitudinal live imaging of immune responses. MH ABDULREDA, G FALEO, RD MOLANO, M LOPEZ-CABEZAS, J MOLINA, Y TAN, OAR ECEVERRIA, E ZAHR-AKRAWI, R RODRIGUEZ-DIAZ, PK EDLUND, I LEIBIGER, AL BAYER, V PEREZ, C RICORDI, A CAICEDO, A PILEGGI & P-O BERGGREN. **Proc Natl Acad Sci USA** 108: 12863-12868, 2011.

360 Munc18-1 and Munc18-2 differently modulate β-cell Ca^{2+}-sensitivity and kinetics of insulin exocytosis. SA MANDIC, M SKELIN, JU JOHANSSON, MS RUPNIK, P-O BERGGREN & C BARK. **J Biol Chem** 286: 28026-28040, 2011.

361 Three-dimensional colocalization analysis in immunostained sections of human pancreas. MH ABDULREDA, R RODRIGUEZ-DIAZ, P-O BERGGREN & A CAICEDO. **Nature Protocol Exchange** (Community contributed) doi: 10.1038/protex.2011.258.

362 Apolipoprotein CIII reduces proinflammatory cytokine-induced apoptosis in rat pancreatic islets via the Akt prosurvival pathway. J STØRLING, L JUNTTI-BERGGREN, G OLIVECRONA, MC PRAUSE, P-O BERGGREN & T MANDRUP-POULSEN. **Endocrinology** 152: 3040-3048, 2011.

363 Measuring dynamic hormone release from pancreatic islets using perifusion assay. A FACHADO, J MOLINA, R RODRIGUEZ-DIAZ, MC JACQUES-SILVA, O CABRERA, MH ABDULREDA, P-O BERGGREN & A CAICEDO. **Nature Protocol Exchange** (Community contributed) doi: 10.1038/ protex.2011.260.

364 Donor islet endothelial cells in pancreatic islet revascularization. D NYQVIST, S SPEIER, R RODRIGUEZ-DIAZ, RD MOLANO, S LIPOVSEK, M RUPNIK, A DICKER, E ILEGEMS, E ZAHR-AKRAWI, J MOLINA, M LOPEZ-CABEZA, S VILLATE, MH ABDULREDA, C RICORDI, A CAICEDO, A PILEGGI & P-O BERGGREN. **Diabetes** 60: 2571-2577, 2011.

365 Anti-inflammatory properties of exenatide in human pancreatic islets. SR CECHIN, I PÉREZ-ÁLVAREZ, E FENJVES, RD MOLANO, A PILEGGI, P-O BERGGREN, C RICORDI & RL PASTORI. **Cell Transplant** 21: 633-648, 2012.

366 Non-invasive *in vivo* imaging of pancreatic β-cell function and survival – a perspective. IB LEIBIGER, A CAICEDO & P-O BERGGREN. **Acta Physiol** (Oxf)

204: 178-185, 2012.

367 One-step purification of functional human pancreatic alpha cells. M KÖHLER, E DARÉ, MY ALI, IB LEIBIGER, A TIBELL, L JUNTTI-BERGGREN & P-O BERGGREN. **Integrative Biology** 4: 209-219, 2012.

368 Transthyretin binds to glucose-regulated proteins and is subjected to endocytosis by the pancreatic β-cell. N DEKKI, E REFAI, R HOLMBERG, M KÖHLER, H JÖRNVALL, P-O BERGGREN & L JUNTTI-BERGGREN**. Cell Mol Life Sci** 69: 1733-1743, 2012.

369 Letter about Coppetiers et al. [Eletter] A PILEGGI, MH ABDULREDA, G FALEO, RD MOLANO, C RICORDI, A CAICEDO & P-O BERGGREN. **J Clin Invest** (2012) doi:10.1172/JCI59285L1.

370 Real-time detection of acetylcholine release from the human endocrine pancreas. R RODRIGUEZ-DIAZ, R DANDO, YA HUANG, P-O BERGGREN, SD ROPER & A CAICEDO. **Nature Protocols** 7: 1015-1023, 2012.

371 Markedly decreased blood perfusion of pancreatic islets transplanted intraportally into the liver: Disruption of islet integrity necessary for islet revascularization. J HENRIKSNÄS, J LAU, G ZANGH, P-O BERGGREN, M KÖHLER & P-O CARLSSON. **Diabetes** 61: 665-673, 2012.

372 The pancreatic beta cell as a paradigm for advances in inositide research.CJ BARKER & P-O BERGGREN. **Advances in Biological Regulation** 52:361-368, 2012.

373 Inositol hexakisphosphate suppresses excitatory neurotransmission via synaptotagmin-1 C2B domain in the hippocampal neuron. S-N YANG, Y SHI, G YANG, Y LI, L YU, O-H SHIN, T BACAJ, TC SÜDHOF, J YU & P-O BERGGREN. **Proc Natl Acad Sci USA** 109: 12183-12188, 2012.

374 Noninvasive *in vivo* model demonstrating the effects of autonomic innervations on pancreatic islet function. R RODRIGUEZ-DIAZ, S SPEIER, RD MOLANO, A FORMOSO, I GANS, MH ABDULREDA, O CABRERA, J MOLINA, A FACHADO, C RICORDI, I LEIBIGER, A PILEGGI, P-O BERGGREN & A CAICEDO. **Proc Natl Acad Sci USA** 109: 21456-21461, 2012.

375 Glucagon regulates its own synthesis by autocrine signaling. B LEIBIGER, T MOEDE, TP MUHANDIRAMLAGE, D KAISER, P VACA SANCHEZ, IB LEIBIGER & P-O BERGGREN. **Proc Natl Acad Sci USA** 109: 20925-20930: 2012.

376 Dynamin-mediated nephrin phosphorylation regulates glucose-stimulated insulin release in pancreatic beta cells. J JEON, I LEIBIGER, T MOEDE, B WALTER, C FAUL, D MAIGUEL, R VILLARREAL, J GUZMAN, P-O BERGGREN, P MUNDEL, C RICORDI, S MERSCHER-GOMEZ & A FORNONI. **J Biol Chem** 287: 28932-28942, 2012.

377 Localization of cholesterol, amyloid and glia in Alzheimer's disease transgenic mouse brain tissue using time-of-flight secondary ion mass spectrometry (ToF-SIMS) and immunofluorescence imaging. S SOLÉ-DOMÈNECH, P SJÖVALL, V VUKOJEVIC, R FERNANDO, A CODITA, S SALVE, N BOGDANOVIC, AH MOHAMMED, P HAMMARSTRÖM, KPR NILSSON, FM LAFERLA, S JACOB, P-O BERGGREN, L GIMÉNEZ-LLORT, M SCHALLING, L TERENIUS & B JOHANSSON, **Acta Neuropathol** 125: 145-157, 2013.

378 The pancreatic islet as a signaling hub. CJ BARKER, IB LEIBIGER & P-O BERGGREN. **Advances in Biological Regulation** 53: 156-163, 2013.

379 New horizons in cellular regulation by inositol polyphosphates: insights from the pancreatic beta cell. CJ BARKER & P-O BERGGREN. **Pharmacological Rev** 65: 641-669, 2013.

380 A GLP-1 receptor agonist conjugated to an albumin-binding domain for extended half-life. LINDGREN J, REFAI E, ZAITSEV SV, ABRAHAMSÉN L, BERGGREN P-O, KARLSTRÖM AE. **Peptide Science** Volume 102, Number 3, 102:252-259, 2014.

381 Estrogen signaling and the metabolic syndrome: targeting the hepatic estrogen receptor alpha action. M MATIC, G BRYZGALOVA, H GAO, P ANTONSON, P HUMIRE, Y OMOTO, N PORTWOOD, C PRAMFALK, S EFENDIC, P-O BERGGREN, J-Å GUSTAFSSON & K DAHLMAN-WRIGHT. **PLoS ONE** 8: E57458, 2013

382 Transplantation into the anterior chamber of the eye for longitudinal, non-invasive *in vivo* imaging with single-cell resolution in real-time. MH ABDULREDA, A CAICEDO & P-O BERGGREN **J Vis Exp** doi:10.3791/50466, 2013.

383 You are what you eat – do not blame your mother. IB LEIBIGER, E ILEGEMS & P-O BERGGREN. **Molecular Metabolism** 2: 1-2, 2013

384 Emodin regulates glucose utilization by activating AMP-activated protein kinase. P SONG, JH KIM, J GHIM, JH YOON, A LEE, Y KWON, H HYUN, H-Y MOON, H-S CHOI, P-O BERGGREN, P-G SUH & S-H RYU. **J Biol Chem** 288:5732-5742, 2013.

385 C1-Ten is a protein tyrosine phosphatase of IRS-1, regulating IRS-1 stability and muscle atrophy. A KOH, MN LEE, YR YANG, H JEONG, J GHIM, J NOH, J KIM, D RYU, S PARK, P SONG, S-H KOO, NR LESLIE, P-O BERGGREN, JH CHOI, P-G SUH & SH RYU. **Mol Cell Biol**. 33: 1608-1620, 2013.

386 Evidence for Ca^{2+}-regulated ATP release in gastrointestinal stromal tumors. E BERGLUND, D BERGLUND, P AKCAKAYA, M GHADERI, E DARÉ, P-O BERGGREN, M KÖHLER, CA ASPINWALL, W-O LUI, J ZEDENIUS, C LARSSON & R BRÄNSTRÖM. **Exp Cell Res** 319: 1229-1238, 2013.

387 Role of T cell recruitment and chemokine-regulated intra-graft T cell motility patterns in corneal allograft rejection. Y TAN, MH ABDULREDA, F CRUZ-GUILLOTY, N CUTRUFELLO, A SHISHIDO, RE MARTINEZ, S DUFFORT, X XIA, J ECHEGARAY-MENDEZ, RB LEVY, P-O BERGGREN & VL PEREZ. **Am J Transplant** 13: 1461-1473, 2013.

388 Leptin promotes KATP channel trafficking by AMPK signaling in pancreatic β-cells. S-H PARK, S-Y RYU, W-J YU, YE HAN, Y-S JI, K OH, J-W SOHN, A LIM, J-P JEON, H LEE, K-H LEE, S-H LEE, P-O BERGGREN, J-H JEON & W-K HO. **Proc Natl Acad Sci USA** 110: 12673-12678, 2013.

389 Imaging dynamics of $CD11c^{+}$ cells and $Foxp3^{+}$ cells in progressive autoimmune insulitis in the NOD mouse model of type 1 diabetes. A SCHMIDT-CHRISTENSEN, L HANSEN, E ILEGEMS, N FRANSÉN-PETTERSSON, U DAHL, S GUPTA, Å LAREFALK, TD HANNIBAL, A SCHULZ, P-O BERGGREN & D HOLMBERG. **Diabetologia** 56: 2669-2678, 2013.

390 A natural body window to study human pancreatic islet cell function and survival. MH ABDULREDA, A CAICEDO & P-O BERGGREN **CellR4** 1: 111-122, 2013.

391 Islet inflammation in plain sight. MH ABDULREDA & P-O BERGGREN. **Diabetes, Obesity and Metabolism** 15: 105-116, 2013.

392 Reporter islets in the eye reveal the plasticity of the endocrine pancreas. E ILEGEMS, A DICKER, S SPEIER, A SHARMA, A BAHOW, P KARLSSON EDLUND, IB LEIBIGER & P-O BERGGREN. **Proc Natl Acad Sci USA** 110: 20581-20586, 2013.

393 Apolipoprotein CIII hyperactivates β cell Cav1 channels through SR-BI/β1 integrin-dependent coactivation of PKA and Src. Y SHI, G YANG, J YU, L YU, R WESTENBROEK, WA CATTERALL, L JUNTTI-BERGGREN, P-O BERGGREN & S-N YANG. **Cell Mol Life Sci** 71: 1289-1303, 2014.

394 Differential regulation of mouse pancreatic islet insulin secretion and Smad proteins by activin ligands. H WU, K MEZGHENNA, P MARMOL, T GUO, A MOLINER, S-N YANG, P-O BERGGREN & C IBÁNEZ. **Diabetologia** 57: 148-156, 2014.

395 aP2-Cre-mediated inactivation of estrogen receptor alpha causes hydrometra. P ANTONSON, M MATIC, N PORTWOOD RV KUIPER, G BRYZGALOVA, H GAO, SH WINDAHL, P HUMIRE, C OHLSSON, P-O BERGGREN, J-Å GUSTAFSSON & K DAHLMAN-WRIGHT. **PLoS ONE** 9: e85581, 2014.

396 In vivo imaging of kidney glomeruli transplanted into the anterior chamber of the mouse eye. AD KISTLER, A CAICEDO, MH ABDULREDA, C FAUL, D KERJASCHKI, P-O BERGGREN, J REISER & A FORNONI. **Scientific Reports** 4: 3872, DOI: 10.1038/srep03872, 2014.

397 Real-time immune cell interactions in target tissue during autoimmune-induced damage and graft tolerance. J MISKA, MH ABDULREDA, P DEVARAJAN, JB LUI, J SUZUKI, A PILEGGI, P-O BERGGREN & Z CHEN. **J Exp Med** 211: 441-456, 2014.

398 TNF-α and IFN-γ promote lymphocyte adhesion to endothelial junctional regions facilitating transendothelial migration. J JACZEWSKA, MH ABDULREDA, CY YAU, MM SCHMITT, I SCHUBERT, P-O BERGGREN, C WEBER, RR KOENEN, VT MOY & EP WOJCIKIEWICZ. **J Leukoc Biol** 95: 265-274, 2014.

399 Control of insulin secretion by cholinergic signaling in the human pancreatic islet. J MOLINA, R RODRIGUEZ-DIAZ, A FACHADO, MC JACQUES-SILVA, P-O BERGGREN & A CAICEDO. **Diabetes** 63: 2714-2726, 2014.

400 CXCL12 secreted from adipose tissue recruits macrophages and induces insulin resistance in mice. D KIM, J KIM, JH YOON, J GHIM, K YEA, P SONG, S PARK, A LEE, C-P HONG, MS JANG, Y KWON, S PARK, MH JANG, P-O BERGGREN, P-G SUH & SH RYU. **Diabetologia** 57: 1456-1465, 2014.

401 Short and prolonged exposure to hyperglycaemia in human fibroblasts and endothelial cells: Metabolic and osmotic effects. N MORUZZI, M DEL SOLE, R FATO, JM GERDES, P-O BERGGREN, C BERGAMINI, K BRISMAR. **Int J Biochem Cell Biol** 53: 66-76, 2014.

402 Contribution of endothelial injury and inflammation in early phase to vein graft failure: The causal factors impact on the development of intimal hyperplasia in murine models. C-N TSENG, E KARLÖF, Y-T CHANG, M LENGQUIST, P ROTZIUM, P-O BERGGREN, U HEDIN & EE ERIKSSON. **PLoS ONE** 9(6): e98904, 2014.

403 Defects in β-cell Ca^{2+} dynamics in age-induced diabetes. L LI, A TRIFUNOVIC, M KÖHLER, Y WANG, J PETROVIC BERGLUND, C ILLIES, L JUNTTI-BERGGREN, N-G LARSSON & P-O BERGGREN. **Diabetes** 63: 4100-4114, 2014.

404 Adipsin is an adipokine that improves β cell function in diabetes. JC LO, S LJUBICIC, B LEIBIGER, M KERN, IB LEIBIGER, T MOEDE, ME KELLY, DC BHOWMICK, I MURANO, P COHEN, AS BANKS, MJ KHANDEKAR, A DIETRICH, JS FLIER, S CINTI, M BLÜHER, NN DANIAL, P-O BERGGREN & B SPIEGELMAN. **Cell** 158: 41-53, 2014.

405 Mitochondrial GTP insensitivity contributes to hypoglycemia in hyperinsulinemia hyperammonemia (HI/HA) by inhibiting glucagon release. RG KIBBEY, CS CHOI, HY LEE, O CABRERA, RL PONGRATZ, X ZHAO, AL BIRKENFELD, C LI, P-O BERGGREN, C STANLEY & GI SHULMAN. **Diabetes** 63: 4218-4229, 2014.

406 Ionic mechanisms in pancreatic β cell signaling. S-N YANG, Y SHI, G YANG, Y LI, J YU & P-O BERGGREN. **Cell Mol Life Sci** 71: 4149-4177, 2014. DOI: 10.1007/s00018-014-1680-6

407 Expression of nucleobindin 1 (NUCB1) in pancreatic islets and other endocrine tissues. P WILLIAMS, S TULKE, E ILEGEMS, P-O BERGGREN & C BROBERGER. **Cell Tissue Res** 358: 331-342, 2014.

408 Intravital imaging of cytotoxic T lymphocytes. G FALEO, P-O BERGGREN & A PILEGGI. **In: Cytotoxic T-Cells: Methods and Protocols**. (ed. E Ranieri). Human Press Methods in Molecular Biology 1186: 121-129, 2014.

409 Ciliary dysfunction impairs pancreatic insulin secretion and promotes development of type 2 diabetes in rodents. JM GERDES, S CHRISTOU-SAVINA, Y XIONG, T MOEDE, N MORUZZI, P KARLSSON-EDLUND, B LEIBIGER, IB LEIBIGER, C-G ÖSTENSON, PL BEALES & P-O BERGGREN. **Nature Communications** 2014 Nov 6;5:5308. DOI: 10.1038/ncomms6308, 2014.

410 Young capillary vessels rejuvenate aged pancreatic islets. J ALMACA, J MOLINA, R ARROJO E DRIGO, MH ABDULREDA, WB JEON, P-O BERGGREN, A CAICEDO & HG NAM. **Proc Natl Acad Sci USA** 111: 17612-17617, 2014.

411 $Ca_v1.2$ and $Ca_v1.3$ channel hyperactivation in mouse islet β cells exposed to type 1 diabetic serum. G YANG, Y SHI, J YU, Y LI, L YU, A WELLING, F HOFMANN, J STRIESSNIG, L JUNTTI-BERGGREN, P-O BERGGREN & S-N YANG. **Cell Mol Life Sci** 72: 1197-1207, 2015. DOI: 10.1007/s00018-014-1737-6

412 β-cell Ca^{2+} dynamics and function are compromised in aging. CJ BARKER, L LI, M KÖHLER & P-O BERGGREN. **Advances in Biological Regulation** 57: 112-119, 2015. DOI: 10.1016/j.jbior.2014.09.005

413 Regulation of glucose homeostasis using radiogenetics and magnetogenetics in mice. IB LEIBIGER & P-O BERGGREN. **Nature Medicine** 21: 14-16, 2015.

414 Characterization of pancreatic NMDA receptors as possible drug targets for diabetes treatment. J MARQUARD, S OTTER, A WELTERS, A STIRBAN, A FISCHER, J EGLINGER, D HEREBIAN, O KLETKE, MS KLEMEN, A STOZER, S WNENDT, L PIEMONTI, M KÖHLER, J FERRER, B THORENS, F SCHLIESS, MS RUPNIK, T HEISE, P-O BERGGREN, N KLÖCKER, T MEISSNER, E MAYATEPEK, D EBERHARD, M KRAGL & E LAMMERT. **Nature Medicine** 21: 363-372, 2015.

415 Proteomic analysis of the palmitate-induced myotube secretome reveals involvement of the annexin A1-FPR2 pathway in insulin resistance. J H YOON, D KIM, J-H JANG, J GHIM, S PARK, P SONG, Y KWON, J KIM, D HWANG, Y-S BAE, P-G SUH, P-O BERGGREN & SH RYU. **Mol Cell Proteomics** 14: 882-892, 2015.

416 Apolipoprotein CIII links islet insulin resistance to β-cell failure in diabetes. K ÅVALL, Y ALI, IB LEIBIGER, B LEIBIGER, T MOEDE, M PASCHEN, A DICKER, E DARÉ, M KÖHLER, E ILEGEMS, MH ABDULREDA, M GRAHAM, RM CROOKE, VSY TAY, E REFAI, SK NILSSON, S JACOB, L SELANDER, P-O BERGGREN & L JUNTTI-BERGGREN. **Proc Natl Acad Sci USA** 112: E2611-E2619, 2015.

417 Light scattering as an intrinsic indicator for pancreatic islet cell mass and secretion. E ILEGEMS, PP VAN KRIEKEN, PK EDLUND, A DICKER, T ALANENTALO, M ERIKSSON, S MANDIC, U AHLGREN & P-O BERGGREN. **Sci Rep** 2015 Jun 1;5:10740.

418 The pancreatic β-cell in deadly encounter with apolipoprotein CIII. L JUNTTI-BERGGREN, Y ALI & P-O BERGGREN. **Cell Cycle** 14: (17):2715-2716, 2015.

419 Secretome protein signature of human gastrointestinal stromal tumor cells. E BERGLUND, E DARÉ, RMM BRANCA, P AKCAKAYA, R FRÖBOM, P-O BERGGREN, W-O LUI, C LARSSON, J ZEDENIUS, L ORRE, J LEHTIÖ, J KIM & R BRÄNSTRÖM. **Exp Cell Res** 336: 158-170, 2015.

420 Pancreatic islet survival and engraftment is promoted by culture on functionalized spider silk matrices. U JOHANSSON, M RIA, K ÅVALL, N DEKKI SHALALY, SV ZAITSEV, P-O BERGGREN & M HEDHAMMAR. **PLoS One** 10 (6) DOI:10.1371/journal.pone.0130169, 2015.

421 Apolipoprotein a1 increases mitochondrial biogenesis through AMP-activated protein kinase. P SONG, Y KWON, K YEA, H-Y MOON, JH YOON, J GHIM, H HYUN, D KIM, A KOH, P-O BERGGREN, P-G SUH & SH RYU. **Cellular Signalling** 27: 1873-1881, 2015.

422 Nephrin contributes to insulin secretion and affects mammalian target of rapamycin signaling independently of insulin receptor. R VILLARREAL, A MITROFANOVA, D

MAIGUEL, X MORALES, J JEON, F GRAHAMMER, IB LEIBIGER, J GUZMAN, A FACHADO, TH YOO, A BUSCHER KATIN, J GELLERMAN, S MERSCHER, GW BURKE, P-O BERGGREN, J OH, TB HUBER & A FORNONI. **J Am Soc Nephrol** 27 (4), 1029-1041 April 2016, doi: 10.1681/ASN.2015020210.

423 Agonistic aptamer to the insulin receptor leads to biased signaling and functional selectivity through allosteric modulation. N-O YUNN, A KOH, S HAN, JH LIM, S PARK, J LEE, E KIM, SK JANG, P-O BERGGREN & SH RUY. **Nucleic Acids Research** 43: 7688-7701, 2015.

424 New insights into the architecture of the islet of Langerhans: a focused cross-species assessment. R ARROJO E DRIGO, Y ALI, J DIEZ, DK SRINIVASAN, P-O BERGGREN & BO BOEHM. **Diabetologia** 58: 2218-2228 , 2015.

425 Outer hair cell lateral wall structure constrains the mobility of plasma membrane proteins. T YAMASHITA, A HASSAN, S JACOB, J TEMIROV, R GURSKY, L HORNER, S LEIJON, V FROHLICH, P-O BERGGREN, WE BROWNWELL, M AUER, B LEIBIGER, M MELLDO-LAGARDE, J FANG, S FRASE, A FRIDBERGER, P HAKIZIMANA, S EMASIST & J ZUO. **PLoS Genet** 11(9):e1005500. doi:10.1371/journal.pgen.1005500

426 PI3K-C2α knockdown results in re-routing of insulin signaling and pancreatic beta cell proliferation. B LEIBIGER, T MOEDE, M PASCHEN, N-O YUNN, JH LIM, SH RYU, T PEREIRA, P-O BERGGREN & IB LEIBIGER. **Cell Reports** 13: 15-22, 2015.

427 Glucose intolerance and pancreatic β-cell dysfunction in the anorectic *anx/anx* mouse. C LINDFORS, A KATZ, L SELANDER, JE JOHANSEN, G MARCONI, M SCHALLING, T HÖKFELT, P-O BERGGREN, S ZAITSEV & IAK NILSSON. **Am J Physiol Endocrinol Metab** 309: E418-E427, 2015.

428 Spatial and temporal coordination of insulin granule exocytosis in intact human pancreatic islets. J ALMACA, T LIANG, HY GAISANO, HG NAM, P-O BERGGREN & A CAICEDO. **Diabetologia** 58: 2810-2818, 2015.

429 ARA290 improves insulin release and glucose tolerance in type 2 diabetic GK rats. C MULLER, K YASSIN, L-S LI, M PALMBLAD, S EFENDIC, P-O BERGGREN, A CERAMI, M BRINES, C-G ÖSTENSON. **Mol Med** 21: 969-978, 2015.

430 TLR3-/4-priming differentially promotes Ca^{2+} signalling and cytokine expression and Ca^{2+}-dependently augments cytokine release in hMSCs. KS PARK, SH KIM, A DAS, S-N YANG, KH JUNG, MK KIM, P-O BERGGREN, Y LEE, JC CHAI, HJ KIM & YG CHAI. **Scientific Reports** DOI:10.1038/srep23103, 2016.

431 Liraglutide compromises pancreatic beta cell function in a humanized mouse model. MH ABDULREDA, R RODRIGUEZ-DIAZ, A CAICEDO & P-O BERGGREN. **Cell Metab** 23: 541-546, 2016.

432 The anterior chamber of the eye is a transplantation site that supports and enables visualization of beta cell development in mice. Y ALI, J DIEZ, L SELANDER, X ZHENG, H EDLUND & P-O BERGGREN. **Diabetologia** 59: 1007-1011, 2016.

433 Non-invasive cell type selective *in vivo* monitoring of insulin resistance dynamics. M PASCHEN, T MOEDE, B LEIBIGER, S JACOB, G BRYZGALOVA, IB LEIBIGER, P-O BERGGREN. **Scientific Reports** DOI:10.1038/srep21448, 2016.

434 Insulinotropic compounds decrease endothelial cell survival. II ZAITSEVA, P-O BERGGREN & ZAITSEV SV. **Toxicology in Vitro** 33: 1-8, 2016. DOI: 10.1016/j.tiv.2016.02.004

435 Silk matrices promote formation of insulin-secreting islet-like clusters. N DEKKI SHALALY, M RIA, U JOHANSSON, K ÅVALL, P-O BERGGREN, M HEDHAMMAR. **Biomaterials** 90: 50-61, 2016.

436 Nephrin contributes to insulin secretion and affects mammalian target of rapamycin signaling independently of insulin receptor. R VILLARREAL, A MITROFANOVA, D MAIGUEL, X MORALES, J JEON, F GRAHAMMER, IB LEIBIGER, J GUZMAN, A FACHADO, TH YOO, A BUSHER KATIN, J GELLERMANN, S MERSCHER, GW BURKE, P-O BERGGREN, J OH, TB HUMBER & A FORNONI. **J Am Soc Nephrol** 27: 1029-1041, 2016.

437 The imidazoline compound RX871024 promotes insulinoma cell death independent of AMP-activated protein kinase inhibition. II ZAITSEVA, SV ZAITSEV & P-O BERGGREN. **Invest New Drugs** 34: 522-529, 2016.

438 Diabetes prevention through antiviral treatment in biobreeding rats. B NIKLASSON, G ARBRANDT A KAWECKI, L JUNTTI-BERGGREN, P-O BERGGREN, SM AL-QAHTANI, A-L GUSTAFSSON, G BRYZGALOVA & W KLITZ. **Viral Immunology** 29: 452-458, 2016.

439 Clinical intraocular islet transplantation is not a number issue. A SHISHIDO, A CAICEDO, R RODRIGUEZ-DIAZ, A PILEGGI, P-O BERGGREN & MH ABDULREDA. **CellR4** 4(4): e2120, 2016.

440 The different faces of the pancreatic islet. MH ABDULREDA, R RODRIGUEZ-DIAZ, O CABRERA, A CAICEDO & P-O BERGGREN. **In: Pancreatic Islet Isolation** (ed. M. Ramírez-Domínguez). **Advances in Experimental Medicine and Biology** 938: 11-24, 2016.

441 Activation of hepatic AMPK by 17β-estradiol suppresses both nuclear receptor Nr2c2/TR4 and its downstream lipogenic targets, reduces gluconeogenic genes and improves insulin signaling. SM AL-QAHTANI, G BRYZGALOVA, S EFENDIC, P-O BERGGREN & N PORTWOOD. **Dis Mol Med** 4: 55-67, 2016.

442 Human beta cells produce and release serotonin to inhibit glucagon secretion from alpha cells. J ALMACA, J MOLINA, D MENEGAZ, AN PRONIN, A TAMAYO, V SLEPAK, P-O BERGGREN & A CAICEDO. **Cell Reports** 17: 3281-3291, 2016.

443 17β-estradiol suppresses visceral adipogenesis and activates brown adipose tissue-specific gene expression. SM AL-QAHTANI, G BRYZGALOVA, I VALLADOLID-ACEBES, M KORACH-ANDRÉ, K DAHLMAN-WRIGHT, S EFENDIC, P-O BERGGREN & N PORTWOOD. **Horm Mol Biol Clin Invest** 29: 13-26, 2017.

444 Apolipoprotein CIII is a new player in diabetes. L JUNTTI-BERGGREN & P-O BERGGREN. **Curr Opin Lipidol** 28: 27-31, 2017.

445 Phase modulation of insulin pulses enhances glucose regulation and enables inter-islet synchronization. B LEE, T SONG, K LEE, J KIM, S HAN, P-O BERGGREN, SH RYU & J JO. **PLoS ONE** Vol:12, 2017.

446 Preservation of anti-cancer and immunosuppressive properties of rapamycin achieved through controlled releasing particles. YL FAN, HW HOU, HM TAY, WM GUO, P-O BERGGREN& SCJ LOO. **AAPS PharmaSciTech** 18: 2648-2657, 2017.

447 A novel toolbox to investigate tissue spatial organization applied to the study of the islets of Langerhans. TNH TRAN, R DRIGO, P-O BERGGREN & T BOUDIER. **Scientific Reports** DOI: 10.1038/srep44261, 2017.

448 Intraocular *in vivo* imaging of pancreatic islet cell physiology/pathology. IB LEIBIGER & P-O BERGGREN. **Molecular Metabolism** 6: 1002-1009, 2017. DOI: 10.1016/j.molmet.2017.03.014

449 Biochemical profiling of diabetes disease progression by multivariate vibrational microspectroscopy of the pancreas. C NORD, M ERIKSSON, A DICKER, A ERIKSSON, E GRONG, E ILEGEMS, R MÅRVIK, B KULSENG, P-O BERGGREN, A GORZSAS & U AHLGREN. **Scientific Reports** DOI:10.1038/ s41598-017-0705-z, 2017.

450 Pancreatic islet blood flow dynamics in primates. JA DIEZ, R ARROJO E DRIGO, X ZHENG, OV STELMASHENKO, M CHUA, R RODRIGUEZ-DIAZ, M FUKUDA, M KÖHLER, I LEIBIGER, SMM TUN, GJ AUGUSTINE, VA BARATHI, P-O BERGGREN. **Cell Reports** 20: 1490-1501, 2017.

451 SNAP-25b-deficiency increases insulin secretion and changes spatiotemporal profile of Ca^{2+} oscillations in β cell networks. T DARAIO, LK BOMBEK, M GOSAK, I VALLADOLID-ACEBES, MS KLEMEN, E REFAI, P-O BERGGREN, K BRISMAR, MS RUPNIK & C BARK. **Scientific Reports** DOI:10.1038/s41598.017-08082-y.

452 Insulin modulates the frequency of Ca^{2+} oscillations in mouse pancreatic islets. B LEE, T SONG, K LEE, J KIM, P-O BERGGREN, SH RY & J JO. **PLoS ONE** doi.org/10.1371/journal.pone.0183569, 2017.

453 Kinetics of functional beta cell mass decay in a diphtheria toxin receptor mouse model of diabetes. PP VAN KRIEKEN, A DICKER, M ERIKSSON, PL HERRERA, U AHLGREN, P-O BERGGREN & E ILEGEMS. **Scientific Reports** DOI:10.1038/s41598-017-12124.w, 2017.

454 DISC1 modulates neuronal stress responses by gate-keeping ER-mitochondria Ca^{2+} transfer through the MAM. SJ PARK, SB LEE, Y SUH, S-J KIM, N LEE, J-H HONG, C PARK, Y WOO, K ISHIZUKA, J-H KIM, P-O BERGGREN, A SAWA & SK PARK. **Cell Reports** 21: 2748-2759, 2017.

455 Inhibition of C1-Ten PTPase activity reduces insulin resistance through IRS-1 and AMPK pathways. H JEONG, A KOH, J LEE, D PARK, JO LEE, MN LEE, K-J JO, HNK TRAN, E KIM, B-S MIN, HS KIM, P-O BERGGREN & SH RYU. **Scientific Reports** DOI:10.1038/s41598-017-18081-8, 2017

456 Mechanistic understanding of insulin receptor modulation: Implications for the development of anti-diabetic drugs. N-O YUNN, J KIM, Y KIM, I LEIBIGER, P-O BERGGREN & SH RYU, **Pharmacology and Therapeutics** 185: 86-98, 2018

457 The yin and yang of apolipoprotein CIII. K ÅVALL, P-O BERGGREN, L JUNTTI-BERGGREN. **Diabetes Metab** 44: 303-304, 2018.

458 Protein kinase- and lipase inhibitors of inositide metabolism deplete IP_7 indirectly in pancreatic β-cells: Off-target effects on cellular bioenergetics and direct effects on IP6K activity. SS RAJASEKARAN, C ILLIES, SB SHEARS, H WANG, TS AYLA, JO MARTINS, E DARÉ, P-O BERGGREN & CJ BARKER. **Cellular Signalling** 42: 127-133, 2018.

459 Kynurenic acid and GPR35 regulate adipose tissue energy homeostasis and inflammation. LZ AGUDELO, DMS FERREIRA, I CERVENKA, G BRYZGALOVA, S DADVAR, PR JANNIG, AT PETTERSSON-KLEIN, T LAKSHMIKANTH, EG SUSTARSIC, M PORSMYR-PALMERTZ, JC CORREIA, M IZADI, V MARTINEZ-REDONDO, PM UELAND, Ö MIDTTUN, Z GERHART-HINES, P BRODIN, T PEREIRA, P-O BERGGREN & JL RUAS. **Cell Metab** 27: 378-394, 2018.

460 Paracrine interactions within the pancreatic islet determine the glycemic set point. RODRIGUEZ DIAZ R, MOLANO RD, WEITZ JR, ABDULREDA MH, BERMAN DM, LEIBIGER B, LEIBIGER I, KENYON NS, RICORDI C, PILEGGI A, CAICEDO A & BERGGREN P-O. **Cell Metab** 27: 549-558, 2018.

461 Inositol hexakisphosphate kinase 1 is a metabolic sensor in pancreatic β-cells. SS RAJASEKARAN, J KIM, G-C GABOARDI, J GROMADA, SB SHEARS, K TIAGO DOS SANTOS, EL NOLASCO, S DE SOUZA FERREIRA, C ILLIES, M KÖHLER, C

GU, SH RYU, JO MARTINS, E DARÉ, CJ BARKER & P-O BERGGREN. **Cellular Signalling** 46: 120-128, 2018.

462 Blocking Ca^{2+} channel β_3 subunit reverses diabetes. K LEE, J KIM, M KÖHLER, J YU, Y SHI, S-N YANG, SH RYU & P-O BERGGREN. **Cell Reports** 24: 922-934, 2018.

463 Integrative micro-endscopic system combined with conventional microscope for live animal tissue imaging. M KÖHLER, B PAULSON, Y KIM, S LEE, A DICKER, P VAN KRIEKEN, JY KIM, C-G PACK, J JOO, P-O BERGGREN & JK KIM. **J Biophotonics** doi: 10.1002/jbio.201800206.

464 Co-immunoprecipitaton assay using endogenous nuclear proteins from cells cultured under hypoxic conditions. X ZHENG, CQE HO, KL LEE, K GRADIN, TS PEREIRA, P-O BERGGREN & Y ALI. **JOVE** doi: 10.3791/57836, 2018.

465 Neither polyphenol-rich red wine nor fenobrite affects the onset of type-1 diabetes mellitus in the BB rat. K ÅVALL, P-O BERGGREN & L JUNTTI-BERGGREN. **Lab Anim Res** 34: 126-131, 2018.

466 miR-31 regulates energy metabolism and is suppressed in T cells from patients with Sjögren's syndrome. A JOHANSSON, WA NYBERG, M SJÖSTRAND, N MORUZZI, P BERGMAN, M KHADEMI, M ANDERSSON, F PIEHL, P-O BERGGREN, R COVACU, M JAGODIC & A ESPINOSA. **Europ J Immunol** 49: 313-322, 2019.

467 Diet-induced β-cell insulin resistance results in reversible loss of functional β-cell mass. M PASCHEN, T MOEDE, I VALLADOLID-ACEBES, B LEIBIGER, N MORUZZI, S JACOB, CF GARCIA-PRIETO, K BRISMAR, IB LEI BIGER & P-O BERGGREN. **FASEB J** 33: 204-218, 2019. DOI: 10.1096/fj.201800826r

468 Operational immune tolerance towards transplanted allogeneic pancreatic islets in mice and a non-human primate. ABDULREDA HM, BERMAN DM, SHISHIDO A, MARTIN C, HOSSAMELDIN M, TSHIGGFRIE A, HERNANDEZ LF, HERNANDEZ A, RICORDI C, PAREL JM, JANKOWSKA-GAN E, BURLINGHAM WJ, ARRIETA-QUINTERO EA, PEREZ VL, KENYON NS & BERGGREN P-O. **Diabetologia** 62;(5)811-821, 2019. DOI: 10.1007/s00125-019-4814-4

469 The eye as a novel imaging site in diabetes research. S-N YANG & P-O BERGGREN. **Pharmacology & Therapeutics**. 197: 103-121, 2019.

470 Local release of rapamycin by microparticles delays islet rejection within the anterior chamber of the eye. Y FAN, X ZHENG, Y ALI, P-O BERGGREN & SCJ LOO. **Scientific Reports**. Doi.org/10.1038/s41598-019-40404-0, 2019.

471 The association of thyroid-stimulating hormone (TSH) and free thyroxine (fT4) concentration levels with carbohydrate and lipid metabolism in obese and overweight teenagers. KA KORZENIOWSKA, M BRZEZINSKI, K SZAREJKO, M RADZIWITT,

T ANYSZEK, L CZUPRYNIAK, P SOSZYNSKI, P-O BERGGREN & M MYSLIWIEC. **Endokrynologia Polska** 70: 172-178, 2019.

472 Inositol pyrophosphates and Akt/PKB: Is the pancreatic β-cell the exception to the rule? J KIM, E DARÉ, S SURENDRAN RAJASEKARAN, SH RYU, P-O BERGGREN & CJ BARKER. **Cellular Signalling** 58: 131-136, 2019.

473 Assembly of functionalized silk together with cells to obtain proliferative 3D cultures integrated in a network of ECM-like microfibers. U JOHANSSON, M WIDHE, N DEKKI SHALALY, I LINARES ARREGUI, L NILEBÄCK, C PANAGIOTIS TASIOPOULOS, C ÅSTRAND, P-O BERGGREN, C GASSER & M HEDHAMMAR. **Scientific Reports.** Doi.org/10.1038/s41598-019-42541-y.

474 In vivo imaging of type 1 diabetes immunopathology using eye-transplanted islets in NOD mice. ABDULREDA MH, MOLANO RD, FALEO G, LOPEZ-CABEZAS M, SHISHIDO A, ULISSI U, FOTINO C, HERNANDEZ LF, TSCHIGGFRIE A, ALDRICH VR, TAMAYO-GARCIA A, BAYER AS, RICORDI C, CAICEDO A, BUCHWALD P, PILEGGI A, BERGGREN P-O. **Diabetologia** Jul;62(7):1237-1250, 2019. DOI: 10.1007/s00125-019-4879-0

475 Translational assessment of a genetic engineering methodology to improve islet function for transplantation. P VAN KRIEKEN, A VOZNENSENSKAYA, A DICKER, Y XIONG, J HONG PARK, J IK LEE, E ILLEGEMS, P-O BERGGREN. **EBioMedicine** 45 (2019) 529-541. Doi.org/10.1016/j.ebiom.2019.06.045.

476 Phospholipase C-β1 potentiates glucose-stimulated insulin secretion. HWANG HJ, YANG YR, KIM HY, CHOI Y, PARK KS, LEE H, MA JS, YAMAMOTO M, KIM J, CHAE YC, CHOI JH, COCCO L, BERGGREN P-O, JANG HJ, SUH PG. **FASEB J. 33,** 10668-10679 (2019). Doi: 10.1096/fj.201802732RR 2019.

477 Structural basis for delta cell paracrine regulation in pancreatic islets. R ARROJO-DRIGO, S JACOB, C GARCIA-PRIETO, X ZHENG, M FUKUDA, H TRAN THI NHU, O STELMASHENKO, FL MARTINS PECANHA, R RODRIGUES-DIAZ, E BUSHONG, T DEERINCK, S PHAN, Y ALI, I LEIBIGER, M CHUA, T BOUDIER, SH SONG, M GRAF, G AUGUSTINE, M ELLISMAN, P-O BERGGREN. **Nature Communications** 16:10(1):3700, 2019. Doi:10.1038/s41467-019-11517-x.

478 Islet macrophages are associated with islet vascular remodeling and compensatory hyperinsulinemia during diabetes. CHITTEZHATH M, GUNASEELAN D, ZHENG X, HASAN R, TAY VS, LIM ST, WANG X, BERGGREN P-O, BORNSTEIN S, BOEHM B, RUEDI C, ALI Y. **Am J Physiol Endocrinol Metab** 317: E1108-E1120, 2019 Oct 1. doi: 10.1152/ajpendo.00248.2019.

479 Noninvasive intravital high-resolution imaging of pancreatic neuroendocrine tumours. BALAN M, TRUSOHAMN M, NING FC, JACOB S, PIETRAS K, ERIKSSON U,

BERGGREN P-O, NYQUIST D. **Scientific Reports** (2019) 9:14636. doi.org/10.1038./s41598-019-51093-0.

480 Mechanism and effects of pulsatile GABA secretion from cytosolic pools in the human beta cell. MENEGAZ D, WALKER HAGAN D, ALMAÇA J, CIANCIARUSO C, RODRIGUEZ-DIAZ R, MOLINA J, DOLAN RM, BECKER MW, SCHWALIE PC, NANO R, LEBRETON F, KANG C, SAH R, GAISANO HY, BERGGREN P-O, BAEKKESKOV S, CAICEDO A, PHELPS EA. **Nature Metabolism** November 2019, Vol 1, 1110-1126. DOI: 10.1038/s42255-019-0135-7

481 Intraocular Pressure Monitoring Following Islet Transplantation to the Anterior Chamber of the Eye. KIM J, KIM J, KU M, CHA E, JU S, PARK WY, KIM KH, KIM DW, BERGGREN P-O, PARK JU. **Nano Letters** 11;20(3):1517-1525, November, 2019, Doi: 10.1021/acs.nanolett.9b03605

482 IgGs from patients with amyotrophic lateral sclerosis and diabetes target $CA_v\alpha_2\delta$ subunits impairing islet cell function and survival. SHI Y, PARK KS, KIM SH, YU J, ZHAO K, YU L, OH KW, LEE K, KIM J, CHAGGAR K, LI Y, DOLPHIN AC, CATTERALL WA, RYU SH, YANG SN, BERGGREN P-O. **Proc Natl Acad Sci USA** 11;116(52):26816-26822 November, 2019, Doi: www.pnas.org/cgi/doi/10.1073/pnas.1911956116.

483 Enhanced expression of β-cell $Ca_V3.1$ channels impairs insulin release and glucose homeostasis. YU J, SHI Y, ZHAO K, YANG G, YU L, LI Y, ANDERSSON EM, ÄMMÄLÄ C, YANG SN, BERGGREN P-O. **Proc Natl Acad Sci USA** 2020 Jan 7;117(1):448-453. doi: 10.1073/pnas.1908691117.

484 In vivo Ca^{2+} dynamics in single pancreatic β-cells. JACOB S, KÖHLER M, TRÖSTER P, VISA MAJORA M, GARCÍA-PRIETO CF, ALANENTALO T, MOEDE T, LEIBIGER B, LEIBIGER IB, BERGGREN P-O. **FASEB J** 2020 Jan;34(1):945-959. doi: 10.1096/fj.201901302RR.

485 Modelling of dysregulated glucagon secretion in type 2 diabetes by considering mitochondrial alterations in pancreatic alpha-cells. GRUBELNIK V, MARKOVIČ R, LIPOVŠEK S, LEITINGER G, GOSAK M, DOLENŠEK J, VALLADOLID-ACEBES I, BERGGREN P-O, STOŽER A, PERC M, MARHL M. **R Soc open sci** 7:191171. http://dx.doi.org/10.1098/rsos.191171.

486 Islet Transplantation to the Anterior Chamber of the Eye – A Future Treatment Option for Insulin-Deficient Type-2 Diabetics? A Case Report from Nonhuman Type-2 Diabetic Primate. TUN SBB, CHUA M, HASAN R, KÖHLER M, ZHENG X, ALI Y, ABDULREDA M, JUNTTI-BERGGREN L, BARATHI VA, BERGGREN P-O. **Cell Transp** 29:1-9, 2020. DOI: 10.1177/0963689720913256

487 Integration of Primary Endocrine Cells and Supportive Cells Using Functionalized Silk Promotes the Formation of Prevascularized Islet-like Clusters. JOHANSSON U, DEKKI

SHALALY N, HJELM LC, RIA M, BERGGREN P-O, HEDHAMMAR M. **ACS Biomater Sci Eng** 2020, 6, 1186-1195. DOI: 10.1021/acsbiomaterials.9b01573

488 “PoZdro!” as an example of a successful multicenter programme for obesity management and healthy lifestyle promotion in children and adolescents – programme protocol and preliminary results from the first intervention site. BRZEZIŃSKI M, KORZENIOWSKA K, SZAREJKO K, RADZIWIŁŁ M, MYŚLIWIEC M, ANYSZEK T, CZUPRYNIAK L, BERGGREN P-O, SOSZYŃSKI P. **Pedr Endocrinol Diabetes Metab** 2020:26 (1) 22-26. DOI: 10.5114/pedm.2020.94393