База генов бактерий, ответственных за деградацию углеводородов

Образец	Обилие генов бактерий, ответственных за деградацию углеводородов, копий генов/г почвы					
	alk I Ps. putida (alkB), Stenotrophomonas spp. (alkB)	alk II Acinetobacter spp. (alkM)	alk III Ps. fluorescens (alkB),Ps. aeruginosa (alkB1), Rhodococcus spp. (alkB1), Burkholderia spp. (alkB), Amycolatopsis spp. (alkB)	nahH Pseudomonas, Sphingomonas, Bacillus (катехол-2,3-диоксигеназа)	xylE Sphingobium (катехол-2,3-диоксигеназа)	Nah (нафталин диоксигеназа)
1	$3,12×10^2$	-	$3,11×10^4$	-	-	-
2	$4,16×10^2$	-	$8,08×10^3$	-	-	-
3	-	-	$1,37×10^4$	-	-	-
4	$9,97×10^3$	-	$2,51×10^6$	$3,89×10^3$	$4,92×10^3$	$1,63×10^4$
5	$1,67×10^4$	-	$2,28×10^6$	$5,40×10^3$	$1,90×10^2$	$1,58×10^4$
6	$1,62×10^4$	-	$2,51×10^6$	$7,81×10^3$	$2,16×10^2$	$1,85×10^4$
7	$2,02×10^4$	-	$3,54×10^6$	$8,26×10^3$	$2,04×10^2$	$2,50×10^4$
8	$5,15×10^2$	-	$2,81×10^3$	-	-	$3,47×10^2$
9	-	-	$1,84×10^4$	-	-	-
10	-	-	$2,33×10^4$	-	-	-
11	$1,57×10^2$	-	$2,80×10^4$	-	-	-
12	$1,84×10^2$	-	$3,09×10^4$	-	-	$1,61×10^2$
13	$5,52×10^2$	-	$4,47×10^4$	-	-	$1,88×10^2$
14	$1,14×10^3$	-	$5,30×10^4$	-	-	-
15	$8,09×10^3$	-	$6,28×10^5$	$1,59×10^3$	$1,04×10^3$	$2,98×10^3$
16	$7,12×10^3$	-	$5,89×10^5$	$1,12×10^3$	$5,09×10^2$	$1,73×10^3$
17	$1,02×10^4$	-	$1,26×10^6$	$5,77×10^3$	$7,36×10^2$	$6,33×10^3$
18	$1,94×10^4$	-	$7,28×10^5$	$1,10×10^3$	$1,17×10^3$	$1,83×10^4$
19	-	-	$2,65×10^4$	-	-	-
20	$2,31×10^2$	-	$1,70×10^4$	-	-	-
21	-	-	$1,28×10^4$	-	-	-
22	$5,52×10^2$	-	$2,74×10^4$	-	-	-
23	$1,65×10^3$	-	$2,26×10^4$	-	-	-
24	$5,40×10^3$	-	$6,74×10^5$	$2,77×10^3$	$5,04×10^2$	$2,25×10^3$
25	$6,89×10^3$	-	$8,05×10^5$	$3,07×10^3$	$8,98×10^2$	$3,04×10^3$

ОТЕ, относительное обилие которых экспоненциально возрастало после внесения нефти в почвы трех различных типов (в условиях лабораторного эксперимента)			
ОТЕ	**Известные углеродород-окисляющие микроорганизмы**	**Наличие генов, кодирующих алкан- и диоксигеназы**	**Вероятные реципиенты плазмид**
Дерново-подзолистая почва			
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Beutenbergiaceae;Other;Other	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__Microbacterium;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardiaceae;g__;s__		"+"	
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardiaceae;g__Rhodococcus;Other		"+"	
k__Bacteria;p__Actinobacteria;c__Thermoleophilia;o__Solirubrobacterales;f__Patulibacteraceae;g__Patulibacter;s__			"+"
k__Bacteria;p__Chloroflexi;c__Anaerolineae;o__Anaerolineales;f__Anaerolinaceae;g__Anaerolinea;s__	"+"		
k__Bacteria;p__Firmicutes;c__Bacilli;o__Bacillales;f__Bacillaceae;g__;s__		"+"	
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Christensenellaceae;g__;s__			"+"
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Gracilibacteraceae;g__;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Gracilibacteraceae;g__Gracilibacter;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Peptococcaceae;Other;Other		"+"	
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Peptococcaceae;g__;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Ruminococcaceae;g__;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Symbiobacteriaceae;g__Symbiobacterium;s__			"+"
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Kiloniellales;f__;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Methylocystaceae;Other;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Xanthobacteraceae;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodospirillales;f__Acetobacteraceae;g__Roseococcus;s__			"+"
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodospirillales;f__Rhodospirillaceae;g__Magnetospirillum;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Sphingomonadales;f__Sphingomonadaceae;g__Sphingobium;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Betaproteobacteria;o__Burkholderiales;f__Alcaligenaceae;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Betaproteobacteria;o__Burkholderiales;f__Alcaligenaceae;g__Achromobacter;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Chromatiales;f__Ectothiorhodospiraceae;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__PYR+0d3;f__;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Sinobacteraceae;Other;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Sinobacteraceae;g__Hydrocarboniphaga;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Xanthomonadaceae;g__Pseudoxanthomonas;Other	"+"		
k__Bacteria;p__TM7;c__TM7-3;o__EW055;f__;g__;s__	"+"		
Светло-серая лесная почва			
k__Bacteria;p__Actinobacteria;c__Acidimicrobiia;o__Acidimicrobiales;f__Microthrixaceae;g__;s__			"+"
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Actinospicaceae;g__;s__			"+"
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Beutenbergiaceae;Other;Other			"+"
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Bogoriellaceae;g__Georgenia;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Cellulomonadaceae;g__Cellulomonas;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Intrasporangiaceae;Other;Other	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;Other;Other	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__Microbacterium;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__Mycetocola;s__	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Mycobacteriaceae;g__Mycobacterium;Other		"+"	
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardiaceae;Other;Other		"+"	
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardiaceae;g__Nocardia;s__		"+"	
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardiaceae;g__Rhodococcus;Other		"+"	
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardioidaceae;g__;s__		"+"	
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Promicromonosporaceae;Other;Other	"+"		
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Streptomycetaceae;Other;Other	"+"		
k__Bacteria;p__Bacteroidetes;c__Bacteroidia;o__Bacteroidales;f__;g__;s__	"+"		
k__Bacteria;p__Bacteroidetes;c__Cytophagia;o__Cytophagales;f__Cytophagaceae;g__Dyadobacter;s__	"+"		
k__Bacteria;p__Chloroflexi;c__Anaerolineae;o__Anaerolineales;f__Anaerolinaceae;g__Anaerolinea;s__	"+"		
k__Bacteria;p__Firmicutes;c__Bacilli;o__Turicibacterales;f__Turicibacteraceae;g__Turicibacter;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__;g__;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Clostridiaceae;g__;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Clostridiaceae;g__Clostridium;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Lachnospiraceae;g__Coprococcus;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Peptococcaceae;Other;Other		"+"	
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Peptococcaceae;g__Desulfosporosinus;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Veillonellaceae;g__;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Veillonellaceae;g__Sporomusa;s__	"+"		
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__[Mogibacteriaceae];g__Anaerovorax;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Caulobacterales;f__Caulobacteraceae;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Caulobacterales;f__Caulobacteraceae;g__Phenylobacterium;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Kiloniellales;f__;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Bradyrhizobiaceae;Other;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Bradyrhizobiaceae;g__Bosea;s__genosp.	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Hyphomicrobiaceae;g__Parvibaculum;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Xanthobacteraceae;Other;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Xanthobacteraceae;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Xanthobacteraceae;g__Xanthobacter;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodobacterales;f__Rhodobacteraceae;g__Paracoccus;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodobacterales;f__Rhodobacteraceae;g__Rhodobacter;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodospirillales;f__Acetobacteraceae;g__Roseomonas;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodospirillales;f__Rhodospirillaceae;g__Magnetospirillum;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Sphingomonadales;f__Sphingomonadaceae;g__Sphingobium;s__		"+"	
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Sphingomonadales;f__Sphingomonadaceae;g__Sphingomonas;Other	"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Sphingomonadales;f__Sphingomonadaceae;g__Sphingopyxis;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Betaproteobacteria;o__MOB+2+;f__;g__;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Deltaproteobacteria;o__Myxococcales;f__Myxococcaceae;g__Anaeromyxobacter;s__	"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Chromatiales;f__Ectothiorhodospiraceae;g__;s__	"+"		

Taxon				
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__PYR+0d3;f__;g__;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Pseudomonadales;f__Pseudomonadaceae;Other;Other	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Pseudomonadales;f__Pseudomonadaceae; g__Pseudomonas;Other		"+"		
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Sinobacteraceae;Other;Other	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Sinobacteraceae;g__;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales; f__Xanthomonadaceae; g__Luteibacter;s__rhizovicinus				"+"
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Xanthomonadaceae;g__Pseudoxanthomonas;Other	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Xanthomonadaceae;g__Rhodanobacter;s__	"+"			
k__Bacteria;p__TM7;c__TM7-+;o__;f__;g__;s__	"+"			
k__Bacteria;p__TM7;c__TM7-3;o__EW055;f__;g__;s__	"+"			
k__Bacteria;p__Tenericutes;c__Mollicutes;o__RF39;f__;g__;s__				"+"
Чернозем типичный				
k__Bacteria;p__Actinobacteria;c__Acidimicrobiia;o__Acidimicrobiales;f__AKIW874;g__;s__				"+"
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Beutenbergiaceae;Other;Other				"+"
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Bogoriellaceae;g__Georgenia;s__	"+"			
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__Mycetocola;s__	"+"			
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardiaceae;g__Nocardia;s__	"+"			
k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Nocardioidaceae;Other;Other		"+"		
k__Bacteria;p__Actinobacteria;c__Thermoleophilia;o__Solirubrobacterales;f__Solirubrobacteraceae;Other;Other	"+"			
k__Bacteria;p__Bacteroidetes;c__Bacteroidia;o__Bacteroidales;f__;g__;s__	"+"			
k__Bacteria;p__Chloroflexi;c__Anaerolineae;o__WCHB+-50;f__;g__;s__				"+"
k__Bacteria;p__Chloroflexi;c__Chloroflexi;o__Chloroflexales;f__Chloroflexaceae;g__;s__				"+"
k__Bacteria;p__Cyanobacteria;c__4C0d-2;o__SM+D++;f__;g__;s__				"+"
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__;g__;s__	"+"			
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Clostridiaceae;g__Caloramator;s__	"+"			
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Lachnospiraceae;g__Coprococcus;s__	"+"			
k__Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__Veillonellaceae;g__Pelosinus;s__				"+"
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Kiloniellales;f__;g__;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhizobiales;f__Xanthobacteraceae;g__Xanthobacter;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodobacterales;f__Rhodobacteraceae;g__Rhodobacter;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodospirillales;f__Acetobacteraceae;g__Roseococcus;s__		"+"		
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Rhodospirillales;f__Rhodospirillaceae;g__Phaeospirillum;s__				"+"
k__Bacteria;p__Proteobacteria;c__Alphaproteobacteria;o__Sphingomonadales;f__Sphingomonadaceae;g__Sphingobium;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Betaproteobacteria;o__MOB+2+;f__;g__;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Betaproteobacteria;o__Rhodocyclales;f__Rhodocyclaceae;g__Azospira;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__PYR+0d3;f__;g__;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Sinobacteraceae;Other;Other	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Sinobacteraceae;g__Nevskia;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Xanthomonadaceae;g__Pseudoxanthomonas;Other	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Xanthomonadaceae;g__Rhodanobacter;s__	"+"			
k__Bacteria;p__Proteobacteria;c__Gammaproteobacteria;o__Xanthomonadales;f__Xanthomonadaceae;g__Thermomonas;s__	"+"			
k__Bacteria;p__Tenericutes;c__Mollicutes;o__RF39;f__;g__;s__				"+"
Виды общие для всех трех типов почв				