

Rapamycin Standard Operating Procedure

Revision: June 24, 2026

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Laboratory Director (LD) Approval is Required Prior to Performing this Procedure

This standard operating procedure (SOP) outlines the handling and use of rapamycin. Review this document and supply the information required in order to make it specific to your laboratory. In accordance with this document, laboratories should use appropriate controls, personal protective equipment, and disposal techniques when handling rapamycin. All laboratory workers must read and understand the [Laboratory Emergencies SOP](#) prior to commencing any work in a laboratory.

Description [Provide additional information as it pertains to your research protocol]

Rapamycin is an immunosuppressant drug used to prevent rejection in organ transplantation; it is especially useful in kidney transplants. Rapamycin inhibits the response to interleukin-2 (IL-2) and thereby blocks activation of T- and B-cells. The health effects from long-term usage could include increase the risk of developing an infection or cancer, especially lymphoma (cancer of a part of the immune system) or skin cancer.

Synonyms: RAPA, RPM, Rapamune, Sirolimus, "macrocytic polyketide", "macrocytic triene antibiotic", antirestenotic, immunosuppressant, "mTOR inhibitor"

Process [Write the steps for using the chemical in your research protocol]

Potential Hazards [Provide additional information as it pertains to your research protocol]

- Toxic: danger of serious damage to health by prolonged exposure if swallowed.
- Possible carcinogenic effect.
- Ingestion of the material may be damaging to the health of the individual.

Engineering Controls [Provide additional information as it pertains to your research protocol]

- Enclosed local exhaust ventilation is required at points of dust, fume or vapor generation.
- All weighing, preparation and reconstitution should take place in a fume hood within the lab.
- Work should be performed in a fume hood or Biological Safety Cabinet.
- Double gloves must be worn with animal administration or when working with needles.

Work Practice Controls [Provide additional information as it pertains to your research protocol]

Decontamination should consist of surface cleaning with water and detergent followed by thorough rinsing.

The use of detergent is recommended because there is no single accepted method of chemical deactivation for all agents involved. A plastic backed absorbent pad should be placed under the work area during the process. This should be changed at the end of each procedure or when a spill occurs.

Personal Protective Equipment [Provide additional information as it pertains to your research protocol]

Personal protective equipment includes a lab coat, eye protection and disposable gloves. Gloves should be changed frequently and should be pulled up over sleeves if possible to reduce the likelihood of any exposed skin. Wash hands and arms immediately after working with the substance. Particulate respirator protection should be assessed where incidental or accidental exposure is anticipated.

Transportation and Storage [Provide additional information as it pertains to your research protocol]

- Keep containers tightly closed and store in a dry and ventilated area.
- Store away from strong oxidizing agents.
- Store according to information on product insert.
- Rapamycin is NOT REGULATED by DOT or IATA.

Waste Disposal [Provide additional information as it pertains to your research protocol]

All hazardous chemical agent contaminated waste should be placed in a 5-gallon white pail. The container should be closed except when actively adding waste. The container must be located in the area where hazardous drugs are being used. All items contaminated by hazardous drugs, including gloves, syringes, vials, needles, and solution containers should be disposed of according to Environment, Health & Safety (EHS) guidelines.

Sharps – place needles, syringes with needles attached and other breakable items into appropriately labeled sharps containers.

Empty stock vials, reagent bottles, etc. – triple rinse with copious amounts of water. Deface label with black magic marker or scraper. Place in a cardboard box for disposal.

Because most spent, unused, and expired chemicals/materials are considered hazardous wastes, they must be properly disposed of. Do not dispose of chemical wastes by dumping them down a sink, flushing in a toilet or discarding in regular trash containers, unless authorized by EHS Hazardous

Materials Management (HMM). Contact EHS-HMM at (734) 763-4568 for waste containers, labels, manifests, waste collection and for any questions regarding proper waste disposal. Also, refer to the [EHS Hazardous Waste Web page](#) for more information.

If animals are administered rapamycin in their food or water, both the food and water container must be labeled. Food or water that is not consumed by the animals must be collected, labeled and submitted for disposal as a hazardous material.

Emergency Reporting

Report all emergencies, suspicious activity, injuries, spills, and fires to the University of Michigan Police (DPSS) by calling 911 or texting 377911. Register with the [University of Michigan Emergency Alert](#)

[System](#) via Wolverine Access.

Training of Personnel

All personnel are required to complete the **General Laboratory Safety Training** session (**BLS025w** or *equivalent*) via the [EHS My LINC](#) Web page. Furthermore, all personnel shall read and fully adhere to this SOP when handling rapamycin.

Certification

I have read and understand the above SOP. I have received approval from my Lab Director to perform this procedure. I agree to contact my Lab Director if I plan to modify this procedure.

Name	Signature	UMID #	Date

Laboratory Director

Revision Date



Revision History (Do not print as part of SOP)

06/24/2026	Annual Revision	Reviewed and updated (IWT)
05/17/2023	Annual Revision	Reviewed and updated (IWT)
02/25/2019	Link Update	Updated links and formatting (DML).
09/19/2018	Partial Revision	Updated EHS name and logo and format and revised the Exposure/unintended contact section (AKJ)