U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 5

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 70 and 71, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	In accordance with letter dated December 28, 2021,	4. Expiration Date: July 31, 2027
1. WMU Homer Stryker M.D. School of Medicine		
2. 1000 Oakland Dr. Kalamazoo, MI 49008	3. License No.: 21-35421-01 is amended in its entirety to read as follows:	5. Docket No.: 030-39044 Reference No.:

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	9. Authorized use
A. Hydrogen-3	A. Non-volatile	A. 80 millicuries total	A. For research and development as defined in 10 CFR 30.4, including in-vitro studies; teaching and training of students.
B. Carbon-14	B. Non-volatile	B. 90 millicuries total	B. For use as in SubItem 9.A.
C. Phosphorus-32	C. Non-volatile	C. 50 millicuries total	C. For use as in SubItem 9.A.
D. Phosphorus-33	D. Non-volatile	D. 70 millicuries total	D. For use as in SubItem 9.A.
E. Sulfur-35	E. Non-volatile	E. 25 millicuries total	E. For use as in SubItem 9.A.

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CONDITIONS

10. Licensed material may be used or stored at the licensee's facilities located at:
    A. 300 Portage St., Kalamazoo, Michigan, 49007
    B. 4717 Campus Dr., Kalamazoo, Michigan, 49008

11. The Radiation Safety Officer (RSO) for this license is Leandra H. Burke, MPA.

12. Licensed material shall only be used by, or under the supervision of, the following individuals for the materials and use indicated:

Authorized Users	Material and Use
Nichol Holodick, M.D., Ph.D.	Hydrogen-3
David Hufnagel, Ph.D.	Carbon-14 and hydrogen-3
James M. McKim, Ph.D., DABT	Carbon-14 and hydrogen-3
Thomas Rothstein, M.D., Ph.D.	Hydrogen-3, phosphorus-32, phosphorus-33, and sulfur-35
Yu Zhang, M.D., Ph.D.	Phosphorus-32

13. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.

14. The licensee shall not use the licensed material in or on humans.

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15. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash provided:

    A. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated, except for radiation labels on materials that are within containers and that will be managed as biomedical waste after they have been released from the licensee.

    B. A record of each such disposal permitted under this license condition shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.

16. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. This license condition applies only to those procedures that are required to be submitted in accordance with the regulations. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

    A. Application dated April 3, 2017 (ML17100B052)
    B. Letter dated June 27, 2017 (ML17180A050)
    C. Letter dated July 6, 2017 (ML17187A218)
    D. Letter dated July 26, 2018 (ML18227A007)

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E. Letter dated September 12, 2018 (ML18275A277)
F. Letter dated June 21, 2019 (ML19182A265)
G. Letter dated January 6, 2020 (ML20013H024)
H. Letter dated February 14, 2020 (ML20049A613)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: March 2, 2022

By: Magdalena R. Gryglak
Digitally signed by Magdalena R. Gryglak
Date: 2022.03.02 08:27:29 -06'00'

Magdalena R. Gryglak
Region 3