How can researchers request the tissues and data?

The unique materials from the USTUR/NHRTR are available to reputable investigators for scientific research purposes. Scientific investigators may request, in writing, tissues or tissue samples from the NHRTR for legitimate research purposes.

Investigators must agree to maintain privacy of the Registrants and to follow all ethical human subjects considerations and legal requirements as well as the published policies of the Registries. If available, the Registries will provide the most suitable tissue requested (e.g. frozen, formalin-fixed, or dried) for study. The only stipulations are that the Registries be acknowledged as the source of the samples, radiochemical analysis, or other data used in scientific proposals or manuscripts submitted for publication, and that a USTUR faculty member be included as a coauthor if previously unpublished data generated by the USTUR are included in a manuscript. Scientific collaboration with the USTUR is encouraged as appropriate.

Where are the NHRTR materials kept?

The NHRTR is located in a modern laboratory research facility in Richland, WA. The facility includes an autopsy room and a radiochemistry laboratory for tissue preparation and analysis. Tissue samples are vacuum-packed and stored frozen at -30° or -70° C.

For more information

about the United States Transuranium and Uranium Registries & National Human Radiobiology Tissue Repository please contact:

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The USTUR

The United States Transuranium and Uranium Registries (USTUR) is a federal-grant program funded by the U.S. Department of Energy Office of Domestic and International Health Studies. Established in 1968 and operated by College of Pharmacy at Washington State University since 1992, the USTUR was designed as a research program to improve radiation protection of nuclear workers. It studies the biokinetics and internal dosimetry of incorporated actinide elements such as plutonium, americium, and uranium in occupationally exposed workers and individuals medically exposed to Thorotrast. Tissues are obtained from voluntary donors (Registrants) who have authorized the Registries to obtain their individual medical and radiation exposure records for research purposes and to collect tissue samples posthumously. More than 340 individuals have donated tissues to the program.

Is information available about the cases?

Information on each Registrant such as radiation exposure history, work history, bioassay and other dosimetry results, chemical exposures, smoking history, cause of death, and results of radiochemical analysis of tissues is available. Exposure and medical histories are available for the majority of the cases from whom tissues or related materials have been obtained. However, the identity of all cases is strictly protected and confidentiality is maintained in accordance with legal and ethical requirements.

What kinds of human tissues have been collected?

The USTUR receives, preserves, and catalogs a portion of each organ and bone from whole-body donors as well as selected tissue and organ samples from partial-body donors. Additionally, the Registries receives tissue samples from surgical specimens from the Registrants and tissue-related materials, including histopathology slides from other radiation worker studies.

Currently, the NHRTR holds approximately 9,000 frozen and formalin-fixed tissue samples from 41 whole- and 103 partial-body USTUR donors (see figure below), and approximately 10,000 acid-digested tissue samples. A wide range of tissues is available including samples from the bone, lung, lymph node, liver, kidney, and brain.

The NHRTR also houses frozen, ashed, dried, and plastic-embedded bone samples from the radium studies carried out by Argonne National Laboratory/Argonne Cancer Research Hospital, the Massachusetts Institute of Technology, and the New Jersey Radium Research Project.

The NHRTR

The National Human Radiobiology Tissue Repository (NHRTR) is a tissue collection associated with the Registries. The NHRTR is comprised primarily of tissues obtained at autopsy from USTUR Registrants. It includes frozen and acid-digested tissues, as well as histological slides and tissue blocks. The NHRTR also houses an existing collection of tissue materials obtained from the terminated Radium Worker study at Argonne National Laboratory and historical plutonium injection studies. These unique collections of tissues, records, and related materials are available to other researchers studying radiation effects, cancer, and other biological phenomena.

Types of frozen tissues available