**NASA Institutional Scientific Collection and Biospecimen Sharing Program at Ames Research Center**

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For decades, NASA and their international partners have flown and conducted non-human biological experiments in space to understand the effects of spaceflight and address potential biological hazards. It is imperative to understand the basic science and health risks associated with spaceflight, along with developing countermeasures, as humanity ventures back to the Moon, and then to Mars and beyond.

Sending organisms into space is a costly endeavor which makes space-flown biological specimens a valuable resource. To enable maximum scientific return, samples not required by the Principal Investigators are harvested, preserved and archived in NASA’s Institutional Scientific Collection (ISC) at Ames Research Center (ARC). These specimens are collected according to well-established SOPs that maintain their quality and integrity. To enable new discoveries, the samples are then made available to the international scientific community through NASA’s Biospecimen Sharing Program (BSP).

The NASA ISC currently stores over 32,000 specimens from Shuttle, International Space Station and ground-based investigations. Tissues are predominantly from mice and rats, though samples are also available from bacteria and quail. The specimens include tissues from all biological systems including musculoskeletal, neurosensory, reproductive, respiratory, circulatory, and digestive and are stored at -80°C, -20°C, +4°C, or ambient. Descriptive metadata is available for all samples. Historically, these tissues have been used for a wide range of analyses, including histology, genomics, and transcriptomics.

Also available through the ISC are tissue from NASA’s Space Radiation Laboratory. To study the effects of space radiation, researchers irradiate biological specimens and unused samples are made available through the LSDA.

These biospecimens and data are made available through the public Life Sciences Data Archive (LSDA) website to promote basic discovery, pre-clinical and clinical science. Visit the NASA ISC-BSP website for more information.

Websites: <https://lsda.jsc.nasa.gov/> ; <https://www.nasa.gov/ames/research/space-biosciences/isc-bsp>