

XIII. Radioactive Materials

Section XIII of the 1998-99 season plans lists the radioactive materials to be used and provides information regarding their form, nuclide, site, and specific use.

<u>PROJECT</u>	<u>NUCLIDE</u>	<u>FORM</u>	<u>SITE</u>	<u>USE</u>
BO-004-O	¹⁴ C ¹⁵ N	¹⁴ C - bicarbonate ¹⁵ N ₂ , ¹⁵ NO ₃ , ¹⁵ NH ₄	McMurdo Station	Metabolic studies of microscopic algae in permanent ice and snow
BO-010-O	¹⁴ C	¹⁴ C - Sodium Bicarbonate	R/V/ LAURENCE M. GOULD	New approaches to Measuring and Understanding the Effects of Ultraviolet Radiation on Photosynthesis by antarctic Phytoplankton on the Weddell Sea and Palmer Station
BO-012-O	³ H	³ H - Ouabain solution	McMurdo Station	Binding assay to study Nalk-ATPase
BP-016-O	¹⁴ C	¹⁴ C - Sodium bicarbonate	Palmer Station; R/V LAURENCE M. GOULD; R/V NATHANIEL B. PALMER	Palmer Station/LM Gould: LTER on the Antarctic Marine Ecosystem: An Ice Dominated Environment - Phytoplankton Ecology Component
BO-037-O	³⁵ S	³⁵ S - Methionine/ Cysteine Mix	Palmer Station	Molecular Adaptations of Microtubule Production in Antarctic Fish
BM-042-P	³ H ¹⁴ C	³ H - Thymidine ¹⁴ C - Carbonate/ Bicarbonate	McMurdo Station/Dry Valleys	McMurdo Dry Valleys: A Cold Desert Ecosystem

<u>PROJECT</u>	<u>NUCLIDE</u>	<u>FORM</u>	<u>SITE</u>	<u>USE</u>
BO-044-O	¹⁴ C ³ H	¹⁴ C - Sodium Bicarbonate ³ H - Thymidone ³ H - Leucine ³ H - Amino Acid Mix	McMurdo Station/Dry Valleys	Metabolic studies microbial communities in the permanent ice covers on lakes in the McMurdo Dry Valleys
BP-046-O	³ H ¹⁴ C	³ H - Leucine ¹⁴ C - Sodium Bicarbonate	R/V LAURENCE M. GOULD; R/V NATHANIEL B. PALMER	LTFR: Microbiology and carbon flux
BO-085-O	¹⁴ C	¹⁴ C - Sodium Bicarbonate ¹⁴ C - Glucose	R/V LAURENCE M. GOULD	Adaptations of organisms at the sulfide and methane containing hydrothermal areas of Deception Island
AO-109-O	²⁴¹ Am	²⁴¹ Am - Metal Disk	South Pole Station	South Pole Air Shower Experiment (SPASE)-2
BO-200-O	³ H ¹⁴ C	³ H - Leucine ¹⁴ C -	R/V LAURENCE M. GOULD; Weddell Sea	Determination of bacteria plankton response to UV radiation in the Weddell Sea and Palmer Station LTER grid.
OR-216-B	³ H	³ H - Leucine	R/V NATHANIEL B. PALMER	Research on Ocean- Atmosphere Variability in Ecosystem Response in the Ross Sea (ROAVERRS)
OR-216-C	³ H ¹⁴ C	³ H - Leucine ¹⁴ C - Thymidine	R/V NATHANIEL B. PALMER	Research on Ocean- Atmosphere Variability and Ecosystem Response in the Ross Sea (ROAVERRS)

PROJECT	NUCLIDE	FORM	SITE	USE
OO-257-O	⁶³ Ni	⁶³ Ni - Foil or Plated source	South Pole Station	South Pole Monitoring for Climatic Change: U.S. Department of Commerce; National Oceanic and Atmospheric Administration, Climate Monitoring and Diagnostics Laboratory (Source is inside an electron capture detector of a gas chromatograph)
BO-267-O	³ H	³ H - Water	Cape Shirreff; Livingston Island	To determine the energetic costs and benefits of different foraging patterns of South Shetland Antarctic fur seals off of Cape Shirreff and Livingston Island
OO-270-O	²⁴¹ Am	²⁴¹ Am - Sealed Sources	South Pole Station	Investigation of sulfur chemistry in the Antarctic Troposphere (ISCAT); these sources are used to generate ions for the mass spectrometers and an aerosol monitor.
BO-301-O	³⁵ S ¹⁴ C ³² P ³³ P ³ H	³⁵ S - Methionine ¹⁴ C - Amino Acids ³² P - Nucleic Acids ³³ P - Nucleic Acids ³ H - Amino Acid	McMurdo Station	Metabolic studies of various Antarctic organisms
BX-325-O	¹⁴ C	¹⁴ C - Sodium Bicarbonate	R/V NATHANIEL B. PALMER; Ross Sea	Primary productivity station Ross Sea