XIII. Radioactive Materials

Section XIII of the 2003-2004 season plans lists the radioactive materials to be used and provides information regarding their form, nuclide, site, and specific use.

PROJECT	NUCLIDE	FORM	SITE	USE
B-002-N	^{3}H ^{35}S ^{14}C	^{3}H Leucine ^{35}S Methionine ^{14}C DMSO	*R/V Nathaniel B. Palmer*	Impact of solar radiation and nutrients on biogeochemical cycling of DMSP and DMS in the Ross Sea
B-005-M	^{14}C ^{3}H	^{14}C – Sodium Bicarbonate ^{3}H- Leucine	McMurdo Station	Antifreeze Proteins in Antarctic Fishes
B-012-M	^{14}C	^{14}C- Polyethylene	McMurdo	Drinking and Na/k-Atpase alpha-subunit isoform expression in Antarctic fish
B-016-P/L	^{14}C	^{14}C - Sodium Bicarbonate	Palmer Station, *R/V Laurence M. Gould*	Palmer, Antarctica Long Term Ecological Research Project: Climate Migration, Ecological Response, and Teleconnections in an Ice-Dominated Environment (Phytoplankton Group)
B-029-M	^{35}S ^{14}C	^{35}S Amino acid ^{14}C Phenylalanine	McMurdo	Geonomic networks for cold-adaptation in embryos of marine polar invertebrates

PROJECT	NUCLIDE	FORM	SITE	USE
B-045-P/L	^{3}H	^{3}H – Thymidine/leucine	Palmer Station *R/V Laurence M. Gould*	Palmer, Antarctica Long Term Ecological Research Project: Climate Migration, Ecological Response, and Teleconnections in an Ice-Dominated Environment
B-047-M	^{14}C	^{14}C – Sodium Bicarbonate ^{14}C-Toluene	McMurdo Station, US Coast Guard *Polar Star*	Interannual Variability in the Antarctic Ross Sea: Nutrient Fields and Seasonal Productivity II
B-200-N	^{3}H	^{3}H Thymidine/leucine	*R/V Nathaniel B. Palmer*	Interactive effect of UV vertical mixing on phytoplankton and bacterial productivity of Ross Sea Phaeocystis bloom
B-203-N	^{14}C	^{14}C Sodium	*R/V Nathaniel B. Palmer*	Interactive effects of UV and vertical mixing and phytoplankton and bacteriplankton in the Ross Sea
B-228-L	^{14}C ^{3}H ^{55}Fe	^{14}C Bicarbonate ^{3}H Leucine/thymidine ^{55}Fe sealed source	*R/V Laurence M. Gould*	Plankton community structure and iron distribution in the Southern Drake passage
B-422-M	^{14}C ^{3}H	^{14}C – Bicarbonate/ leucine ^{3}H – Thymidine/toluene	McMurdo Station/Dry Valleys	The Role of Natural Legacy on Ecosystem Function and Structure in a Polar Desert
B-423-M	^{14}C	^{14}C - Sodium Bicarbonate	McMurdo Station	McMurdo Dry Valleys LTER

PROJECT	NUCLIDE	FORM	SITE	USE
O-176-S	^{63}Ni ^{241} AM	^{63}Ni foil ^{241} AM sealed source	South Pole	Antarctic Troposphere chemistry investigation
O-257-S	^{63}Ni	^{63}Ni - Foil	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)