

Biogeochemistry: Nuclear Magnetic Resonance

We have a Bruker Avance 400 MHz spectrometer with both solids and liquid capabilities. The system is outfitted with three sample probes. The 5mm inverse broadband probe with gradients, tunable from ^{109}Ag to ^{31}P , is our most commonly used probe for ^1H , ^{13}C and ^{15}N . The gradient option is particularly useful with ^1H spectra from marine or biological samples containing large amounts of water. The 10mm broadband observe probe covers the same spectral range as the 5mm inverse probe, but is optimized to directly observe the non-proton nucleus and holds large volumes of material. The 7mm cross polarization-magic angle spinning ("CPMAS") probe again covers the same spectral range, but allows for the acquisition of NMR spectra from solid samples.

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