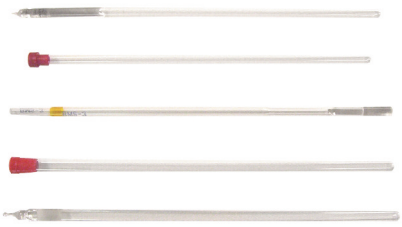
Agilent Salt Tolerant Cold Probe

Data Sheet



Introduction

The Agilent Salt Tolerant Cold Probe is a revolutionary cryogenically-cooled probe that provides signifi cant sensitivity gains when compared to a standard 5 mm cryogenically cooled probe. Ideal for low concentration samples in either non-ionic or highly ionic solvents, the Carbon-Enhanced Salt Tolerant Cold Probe significantly increases direct observe ^{13}C sensitivity compared to the standard salt tolerant cold probe. A selection of innovative, sample tube geometries and groundbreaking RF design maximizes sensitivity for demanding applications.

Key Benefits

- **Sensitivity**–Achieve the highest signal-to-noise for low concentration samples in both non-ionic and highly ionic solvents (> 100 mM NaCl). The probe is ideal for protein samples in H_2O containing high or low salt concentrations. It is the only cold probe available with: a sucrose specification in salt water, susceptibility matched S-Tubes, and the ability to address demanding applications using large and modest sample volumes.
- **Ease of use**–Collect NMR data for a variety of chemicals and biomolecules easily. The probe is compatible with the Removable Cold Probe Accessory, ProTune for automatic probe tuning, and Agilent's versatile product line of sample changing robots.
- **Versatile and convenient**–Choose 3-, 4-, 5- and 6.5-mm NMR sample tubes or Agilent's novel rectangular 3 × 6 S-Tubes, which provide the greatest sensitivity in high salt samples.

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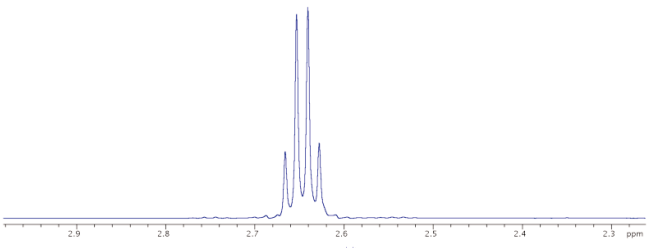


Figure 1
^{1}H S/N of ~7800:1 determined with 0.1% ethylbenzene in 6.5 mm sample tube and a 600 MHz Carbon-Enhanced or standard Agilent Salt Tolerant Cold Probe.

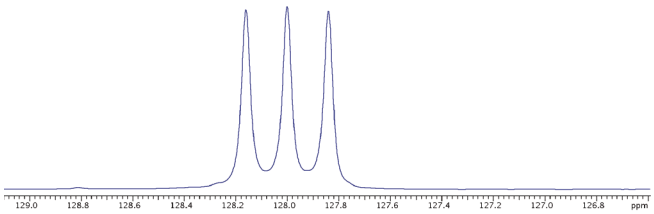


Figure 2
^{13}C S/N ~800:1 determined with ASTM sample in 6.5 mm sample tube and a 600 MHz Carbon-Enhanced Salt Tolerant Cold Probe.

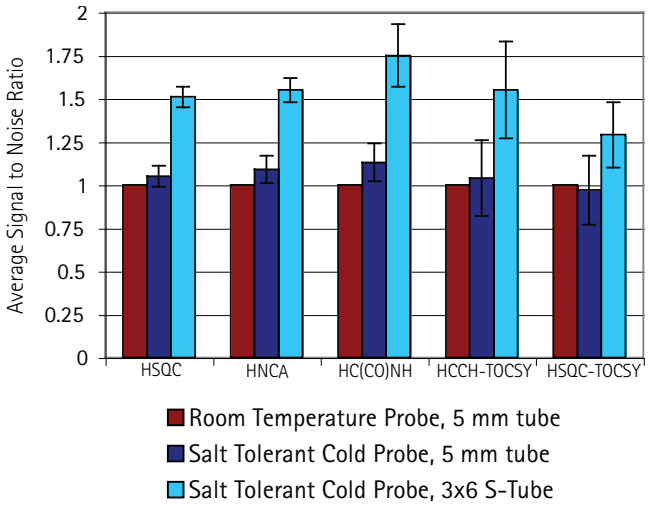
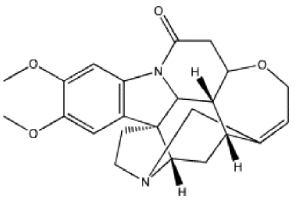


Figure 3
Signal-to-noise comparison of triple resonance experiments using either an Agilent Salt Tolerant Cold Probe with 5 mm cylindrical and 3 × 6 S-Tube or a Room Temperature Probe. Sample contains {^{15}N, ^{13}C}-labeled GB1 protein in 20 mM Tris buffer and 450 mM NaCl, pH 7.2, in 90% H_2O. Data courtesy of the Wagner Lab, Harvard Medical School.



Brucine

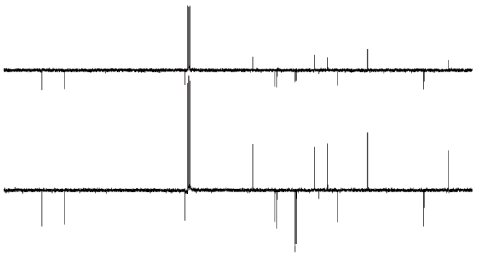


Figure 4
Raw brucine data collected from a multiplicity-edited DEPT experiment. The upright peaks are from the $CDCl_3$ and CH_2s in the solvent. The lower spectrum, which shows increased sensitivity within a multi-pulse sequence, was acquired with 64 scans in one minute using a 6.5 mm NMR tube and an Agilent Carbon-Enhanced Salt Tolerant Cold Probe. The upper spectrum used the same solution in a 5 mm NMR tube.

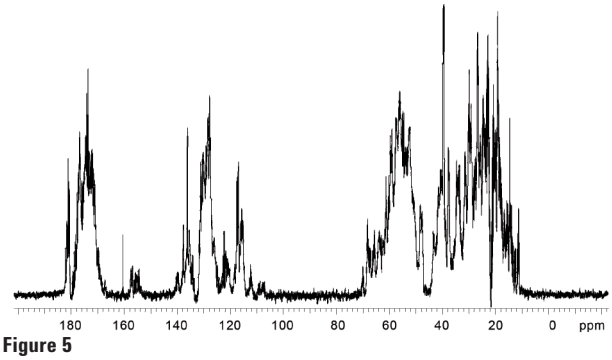


Figure 5
^{13}C spectrum of 1 mM [^{13}C,^{15}N] NuiA, a 143 residue Nuclease A Inhibitor. The spectrum was acquired with 16 scans in 48 seconds using a 5 mm NMR tube and an Agilent Carbon-Enhanced Salt Tolerant Cold Probe.

Ordering Information

Agilent Salt Tolerant Cold Probe configuration	Part number 500 MHz	600 MHz	700 MHz	800 MHz
^{1}H{^{13}C/^{15}N} Salt Tolerant Triple Resonance	S199016600	S199016600	S199017600	S199018600
^{1}H{^{13}C/^{15}N} ^{13}C Enhanced Salt Tolerant Triple Resonance	S199015620	S199016620	S199017620	S199018620

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