

# CICG

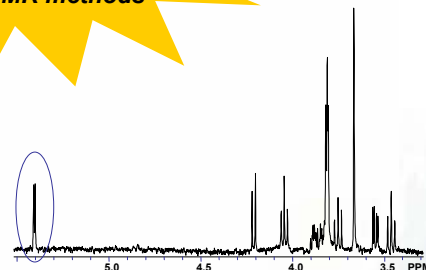
## CapNMR™ Indirect Carbon Gradient Probes *NMR Provides Quality Assurance for Molecular Libraries*

Meet the heart of Protasis' wellplate-centric Microflow NMR systems...



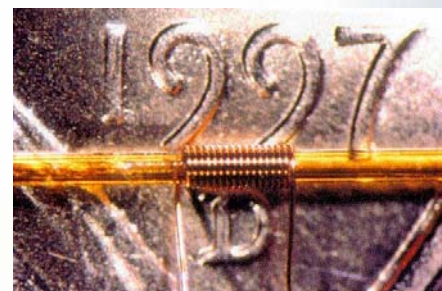
Get more information  
with fast, sensitive  
indirect NMR methods

In 2002, Protasis MRM overcame the limitations of traditional NMR with its original CapNMR Indirect Carbon Gradient NMR Probe. Then in 2004, we increased the observe factor to make the best even better. The enhanced mass sensitivity offered by this unique microcoil design enables NMR data to be obtained using only micrograms of sample mass and only a few microliters of sample volume. These reasonable sample amounts put NMR onto common ground with other modern laboratory instruments and enables sample interchange of standard wellplates and microvials directly.



**Highest Sensitivity!**

Typical homonuclear and heteronuclear NMR spectra are now possible using 100 nmol or less of analyte. A strong z-directed pulse field gradient allows for complete access to modern NMR pulse programs utilizing water suppression techniques and coherence selection pathways. Sensitivity translates into speed, allowing 2D spectra in minutes instead of hours.



**Twice as Fast!**

The ICG microflow probe utilizes a unique, patented NMR flowcell that provides excellent spectral resolution. The ICG probe is available with flowcell volumes of either 5 or 10 uL with an effective observe factor of 50%. The solenoid coil architecture is wound directly over the flowcell and provides maximum signal strength, exceptionally clean baselines and short pulse widths that enable new broadband experiments.

Protasis CapNMR probes use small diameter (0.075um I.D.) Teflon FEP transfer lines to minimize band broadening, maximize solvent compatibility and virtually eliminates analyte wall-coating. Solvent consumption is drastically reduced over conventional scale systems, making the use of NMR-compatible (deuterated) solvents cost-effective and practical. CapNMR probes are engineered, manufactured and calibrated to extremely high standards to deliver world-class proton and correlation spectra with less material in less time. Protasis probes are easy to use, reliable to operate and proven with all major spectrometer systems.

CNMR- XXX-10-075-FFF

**Protasis CapNMR ICG Probe**

B = Bruker  
V = Varian  
J = JEOL

XXX = 300, 400, 500, 600, 700 Mhz  
075 = 075 micron I.D. Teflon FEP transfer tubing  
FFF = 05E or 10E microliter flowcell volume  
(\*E\* for enhanced 50% active volume)

### NMR Compatibility:

Protasis/MRM probes are compatible with Bruker, Varian and JEOL NMR spectrometers. These proton detect / deuterium lock probes are designed for 300 MHz — 700 MHz operation. Call about 800 MHz probes – available now.

## CapNMR™ ICG Probe Performance Benefits

- High mass sensitivity lets you reduce sample preparation time and get results faster.
- Up to 100X faster than 5mm probes. Improve utilization for your existing magnets.
- Rapid 2D experiments enable more information with less sample in less time.
- Small flowcell volume lets you take less sample from valuable, prepared libraries.
- Go shimless. Reshimming is typically not required between samples in the same solvent.
- Save the cost and time of filling NMR tubes. Use standard lab consumables and techniques.
- Excellent hydrodynamic and NMR spectral resolution. Exceptionally clean baselines.
- Short pulse widths enable broadband experiments without overheating sample.
- Miniscule solvent consumption for economical operation and minimal waste.
- Compatible with all HPLC and NMR solvents (e.g., DMSO, chloroform, acetonitrile).
- Flow-through probe design virtually eliminates sample carryover. Easy cleaning protocols.
- Load samples manually with a simple syringe or fully automatically with a liquid handler.
- Exchange solvents (protonated-to-deuterated) with vacuum centrifuge or SPE.
- Solvent management available to protect deuterated solvents from atmospheric contaminants.

### Product Specifications (5 µL 500 MHz shown)

<b>Enhanced CapNMR ICG Probe</b>	
<b>Nuclei</b>	$^1\text{H} \{^{13}\text{C}\} / ^2\text{H}$ lock
<b><math>^1\text{H}</math> Frequency Gradient</b>	500 MHz z-Directed
<b>NMR Flowcell</b>	5 µL
<b>Fluidic Lines/Connectors</b>	75 mm I.D. x 1/32" O.D. Teflon FEP with Upchurch Fingertight Connectors 1/16" O.D. Hastalloy Unions compatible with aggressive cleaning protocols
<b>Resolution/Lineshape (<math>^1\text{H}</math>)</b>	(5% $\text{CHCl}_3$ in acetone- $d_6$ , stopped flow, flowcell filled, LB=0)
<b>50%</b>	< 1 Hz
<b>0.55%</b>	< 10 Hz
<b>0.11%</b>	< 20 Hz
<b>Proton 90° Pulse Width</b> <b>Indirect Detect Carbon 90° Pulse Width</b>	≤ 5 ms ≤ 15 ms
<b>VT Control*</b> (gas source supplied by customer)	0 - 50 °C
<b>Proton Signal to Noise</b>	
<b>10 mM sucrose in 100% <math>\text{D}_2\text{O}</math> with 0.1 mM <math>\text{NaN}_3</math>, quantity sufficient to overfill flowcell. Anomeric proton. LB=0.7 Hz.</b>	> 27:1 single scan
<b>RF connectors</b>	BNC
<b>RF Homogeneity (450°/810°)</b>	75%/50%
<b>Gradient Specifications</b>	
<b>Strength: (typical)</b>	35 G/cm/A
<b>Maximum recommended duty cycle</b>	< 10 %
<b>Maximum recommended drive current</b>	< 10 A

\* Bruker and JEOL systems, probe interfaces to spectrometer manufacturer's heater, supplied by customer.