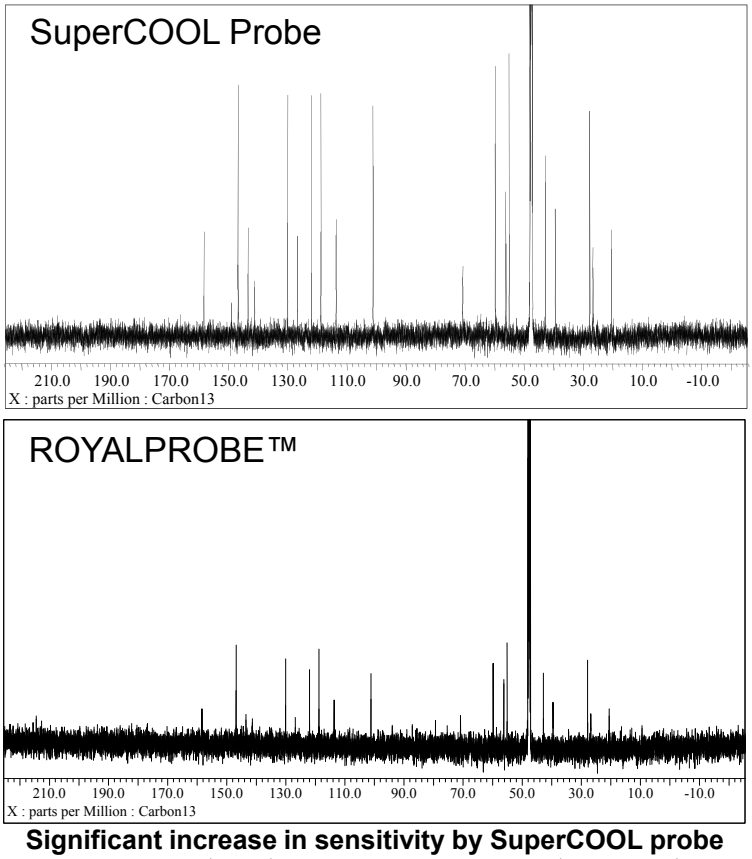
SuperCOOL Probe

Product used : Nuclear Magnetic Resonance (NMR)

Feature of SuperCOOL Probe

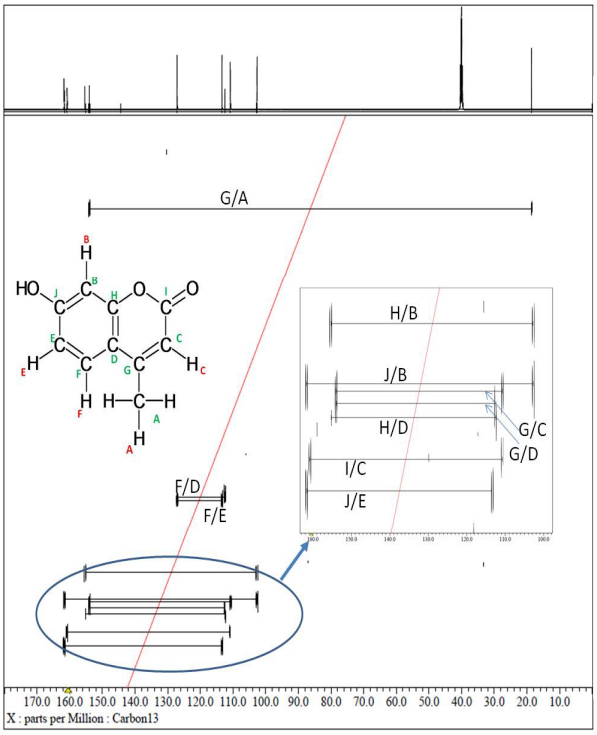
- Thermal noise reduction by cooling coil and preamplifier enhances the sensitivity
- Two cooling systems (Open or Closed) are selectable for your purpose
- Same feel of use and operation as with a conventional probe
- Wide range temperature (-40～150℃) expands the scope of amenable samples
- Automatic tuning system covers various nucleus between ^{1}H and ^{15}N *1
- Z-axis field gradient coil is integrated
- We are able to choose 5mm or 10mm probe

In comparison with the UltraCOOL probe, SuperCOOL probe represents a cryogenic probe with high sensitivity at lower cost and power consumption*2. Thermal noise reduction due to new designed cooling system greatly enhances the sensitivity of NMR measurement.



Significant increase in sensitivity by SuperCOOL probe

SuperCOOL probe (upper) and room temperature probe (lower figure)
(sample: 1mg Quinine in $CDCl_3$)



Sensitivity gains lead to significant decrease of required time for the analysis of 2D experiments

INADEQUATE in 5.5hours with a 5mm SuperCOOL probe
(sample: MUF 25mg in DMSO-d6)

Compared to the conventional room temperature probe, SuperCOOL probes offer a dramatic increase in sensitivity. Aside its unparallel prowess in the analysis of diluted samples or trace compounds, conventional in concentration samples can be analyzed in extremely short time. For this reason SuperCOOL probe can greatly contribute to establishing a through-put work in NMR operation. In addition, its wide variable temperature range (-40～+150℃) allows measurements of polymers at high temperature with high sensitivity and an same feel of use as with conventional probes.

*1: Refer to our representatives for details about measurable nuclei and sensitivity
*2: Comparison between closed Type SuperCOOL probe and UltraCOOL probe

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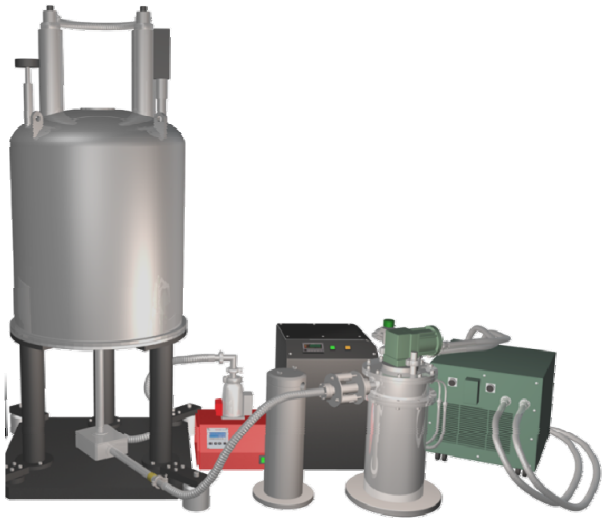
Selectable cooling system

We will assist you on selecting the one that best meets your needs



Open Type（liquid nitrogen ）

- Affordable installation and running costs
- liquid nitrogen as coolant
- Measurement is possible even at times of Nitrogen refilling

Closed Type（circulating helium gas）

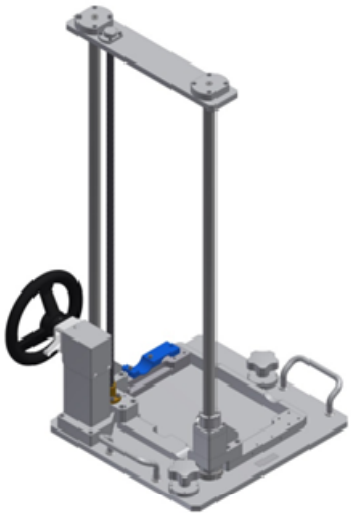
- Sensitivity merit with the newly designed cooling system
- Running costs reduced to 1/4 of those of UltraCOOL probe
- No need for liquid Nitrogen refilling of the cooling system
- No coolant consumption

SuperCOOL Probe is offered under two different cooling systems (Open and Closed Type). The Open Type necessitates no coolant-circulating system resulting in significant reduction in probe installation and maintenance costs. Conversely, The Closed Type offers the possibility of a easy-going continuous routine like operation mode without liquid nitrogen refilling. We assist you in selecting the model that best fits your budget and needs.

For a more user-friendly operation

Boost the efficiency of your instrument

Probe Lifter (option)*3



Probe Lifter spares you the time necessary for warm up/cool down of SuperCOOL probe whenever you wish to change probe. It thus will reduce the idle state of the instrument and contributes to a far more efficient use of the instrument.

More efficient use of the instrument and the various probes

- **Change from/to SuperCOOL probe while at cooled state**
  →save the time (hours) required for probe change
- **Vertical movement of the probe by simply rotating the handle**
  →change probe safely and easily

*3: Installation of this option depends on type of magnet, and refer to our representatives for details

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