

Spinsolve™ 90

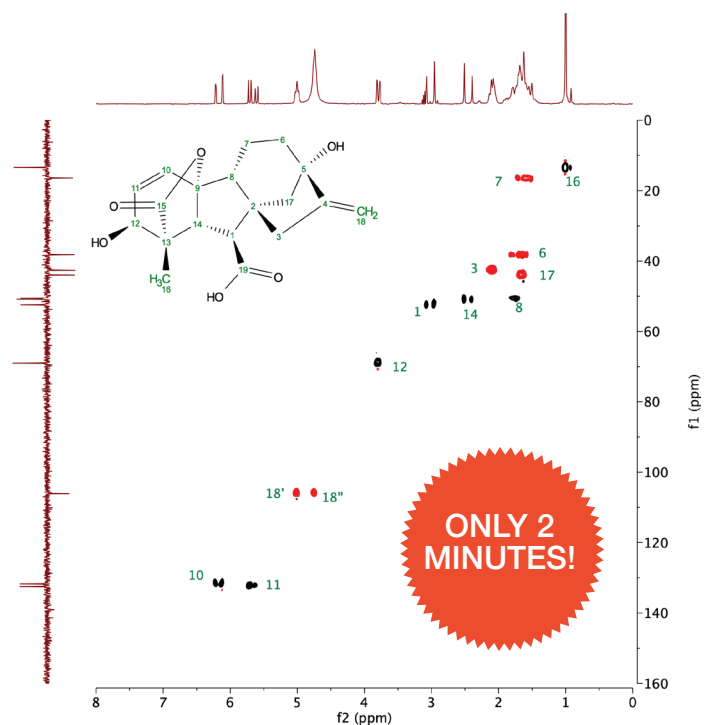
The unique performance of a Spinsolve - now at 90 MHz



Outstanding Features

- 90 MHz ^1H frequency
- Highest sensitivity: 240:1 (1% EtBz)
- Highest resolution:
LW 50/0.55% < 0.4 / 16 Hz
- Multi-nuclear probe
- 5 mm standard NMR tubes
- No sample spinning required
- Advanced methods like COSY, HSQC-ME, HMBC, NOAH, NUS (all gradient assisted)
- Benchtop footprint and weight
- No cryogenics
- Available with automatic sample changer
- On-line reaction monitoring

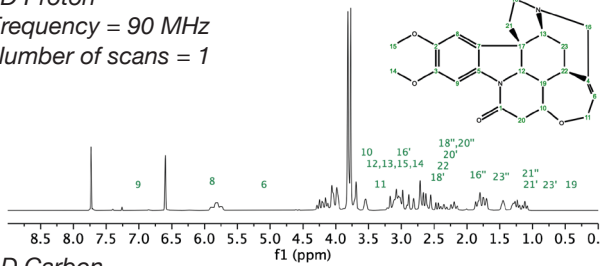
Fast 2 min. HSQC-ME with NUS on a 250 mM sample



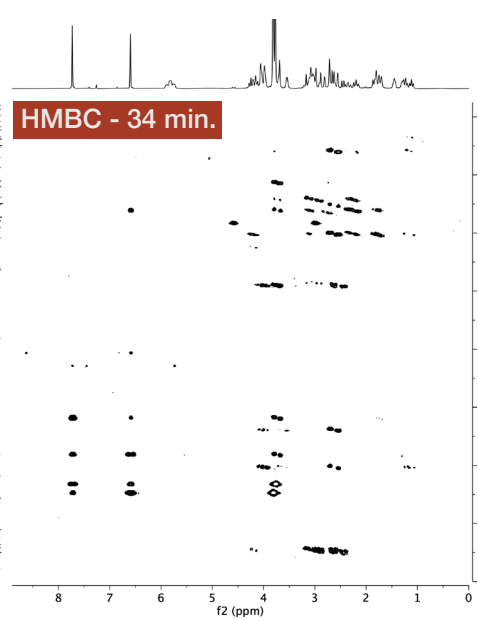
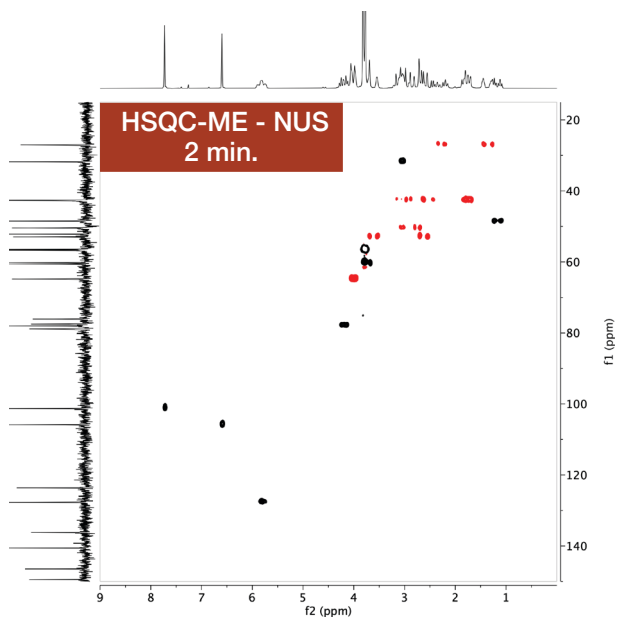
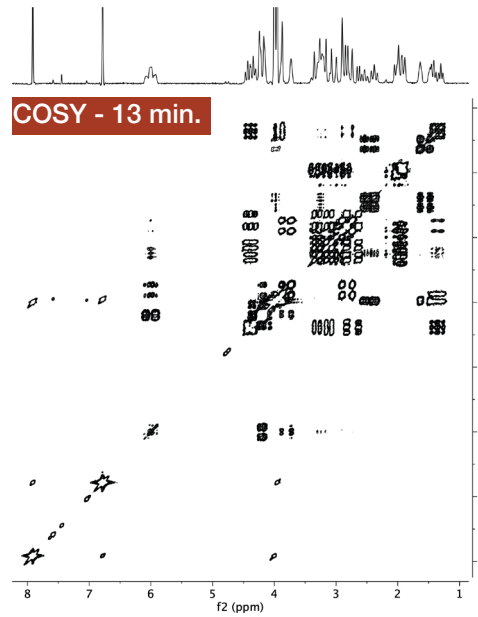
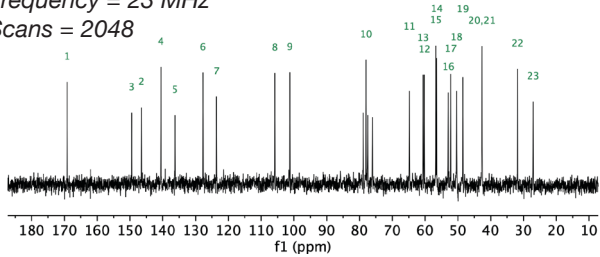
Fast and powerful, advanced multi-nuclear methods for structure confirmation

90 MHz NMR spectra of Brucine at 250 mMolar concentration

1D Proton
Frequency = 90 MHz
Number of scans = 1



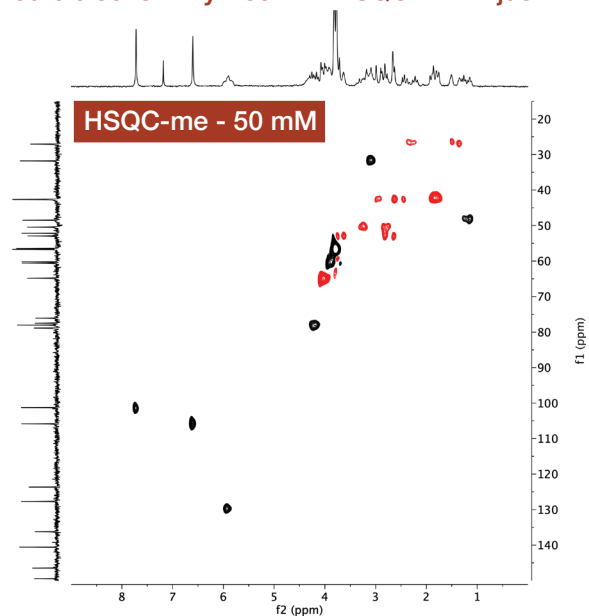
1D Carbon
Frequency = 23 MHz
Scans = 2048



Incredible sensitivity - 50 mM HSQC-ME in just 1 hour

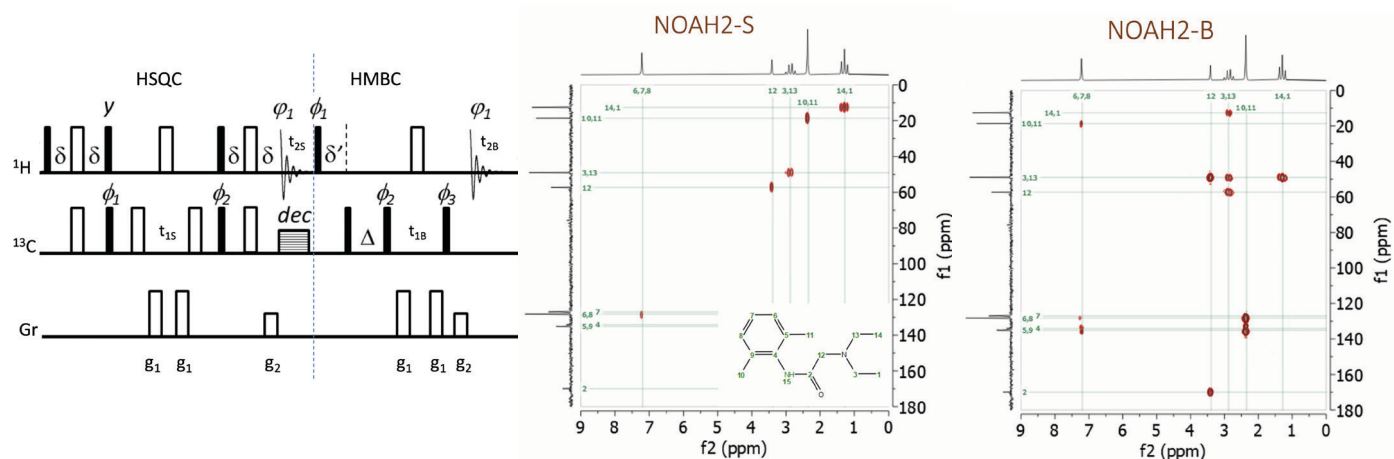
Samples with very low concentration

The high sensitivity of the HSQC-ME running on the Spinsolve 90 makes it possible to measure samples dissolved at low concentrations in short times. The spectrum on the right is the HSQC-ME spectrum of a Brucine sample dissolved at 50 mMolar. The experiment took 1 hour to acquire.



NOAH (NMR by Ordered Acquisition using ^1H -detection)

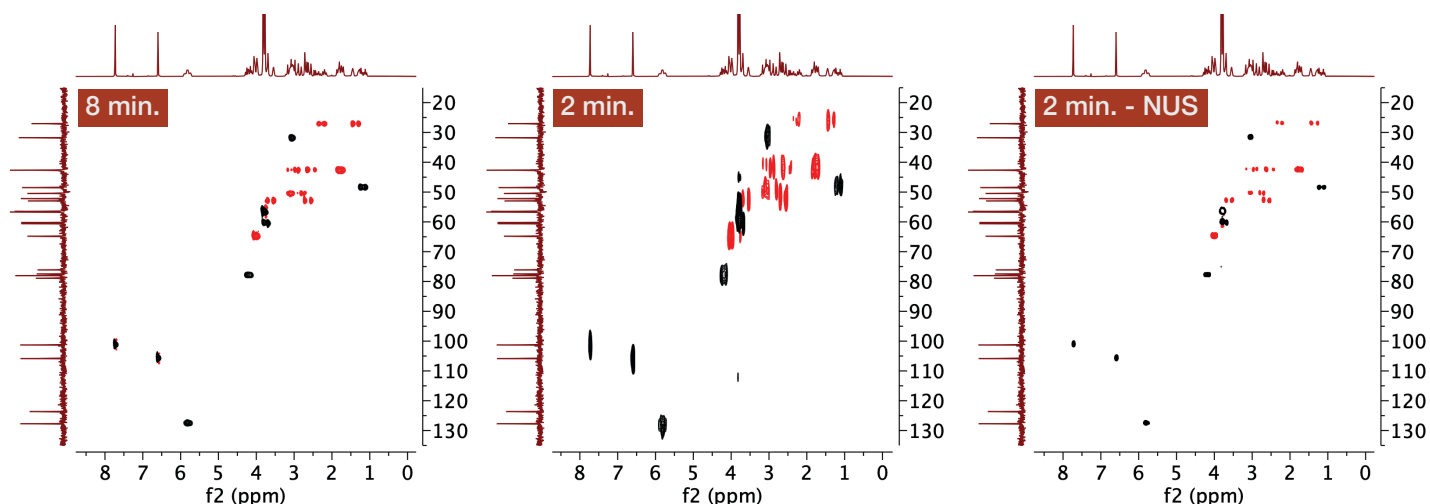
Advanced nested sequences, where multiple experiments are acquired with a single relaxation delay, are programmed in our fully digital spectrometer. All Spinsolve models come with pulse field gradients along x , y , and z for efficient signal selection. Moreover, both RF channels can be pulsed simultaneously with user defined waveforms. The figure below shows a NOAH-2 sequence optimized to acquire an HSQC and an HMBC just one after the other, without relaxation delay in between the acquisition of the rows of the two sequences.



NOAH-2 pulse sequence (left) implemented in the Spinsolve software to measure an HSQC and an HMBC experiment of a lidocaine sample dissolved at 250 mMolar with a single relaxation time. This sequence reduces the acquisition time from 34 minutes (time to acquire the two spectra in separate experiments) down to 21 minutes.

Reducing the measurement time by implementing Non-Uniform Sampling (NUS)

The acquisition of two-dimensional experiments is time consuming because a large number of steps along the indirect dimension are required to obtain an acceptable resolution. The NUS method makes it possible to sample the indirect dimension in a sparse way, considerably reducing the duration of the experiment, without degrading the f_1 resolution. By implementing this sampling approach on the Spinsolve 90 MHz we have managed to reduce the time to acquire an HSQC-ME sequence down to just 2 minutes with a sample concentration of 250 mMolar.



Comparison of the HSQC-ME spectra of a Brucine sample dissolved at 250 mMolar, acquired using the standard sampling method along f_1 with 256 steps (left), 64 steps (middle) and 256 steps sampled using the NUS method with 25% density.



Spinsolve™ 90

Specifications

- Operating frequency: 90 MHz (¹H)
- Nuclei: ¹H, ¹⁹F, ¹³C, ³¹P, ⁷Li, ¹¹B, ²⁹Si, ¹²⁹Xe, ²D, ¹⁵N
- ¹H Linewidth: 50 / 0.55% < 0.4 / 16 Hz
- ¹H Sensitivity (dual channel): >240:1 for 1% Ethyl Benzene
- Operating Temperature Range: 18° C to 28° C (65° F to 82° F)
- Dimensions: 66 x 45 x 43 cm (26" x 18" x 17")
- Weight: 115 kg (253 lb)
- Stray Field: < 2 G all around the enclosure
- Voltage Requirement: 100-240 VAC, 50/60 Hz
- Available with automatic sample changer
- Compatible with the reaction monitoring kit
- All models available with 3D pulsed field gradients optimized for modern pulse sequences
- Optional diffusion PFG




Pulse sequences available on the Spinsolve 90

Proton	Fluorine	Carbon
1D proton	1D Fluorine with ¹ H decoupling	1D Carbon with ¹ H and ¹⁹ F decoupling
1D PRESAT solvent suppression	Paramagnetic	DEPT
1D with ¹⁹ F and ¹³ C decoupling	2D F - COSY	APT
2D COSY	2D F - JRES	HETCOR
2D TOCSY	2D FH - COSY	HSQC
2D ROESY	T ₁	HSQC-ME
2D JRES	PFG-DOSY	HMQC
T ₁ , T ₂	Reaction Monitoring	HMBC
PFG-DOSY		NOAH
Reaction Monitoring		NUS

Other sequences available, contact Magritek for details.

Contact us now for a quote, to request a demo or to measure your samples

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