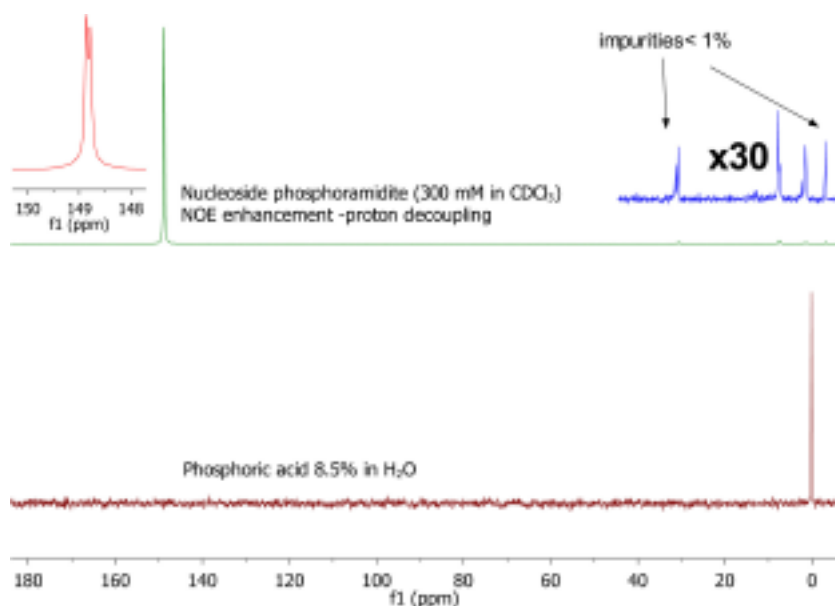


# Phosphorus-31 benchtop NMR

Phosphorus is commonly found in many organic compounds, for example in biological membranes or DNA. The  $^{31}\text{P}$  nucleus has a 100% natural isotopic abundance and a large chemical shift range, making it one of the most commonly used nuclei in biological NMR.



## Who

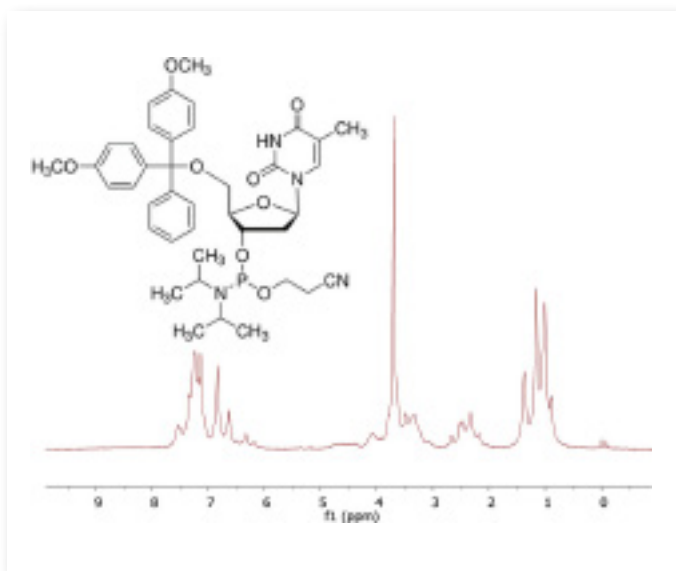
- Medicinal Chemists
- Pharmaceutical Chemists
- Structure Elucidation
- Purity Assessment

## Why

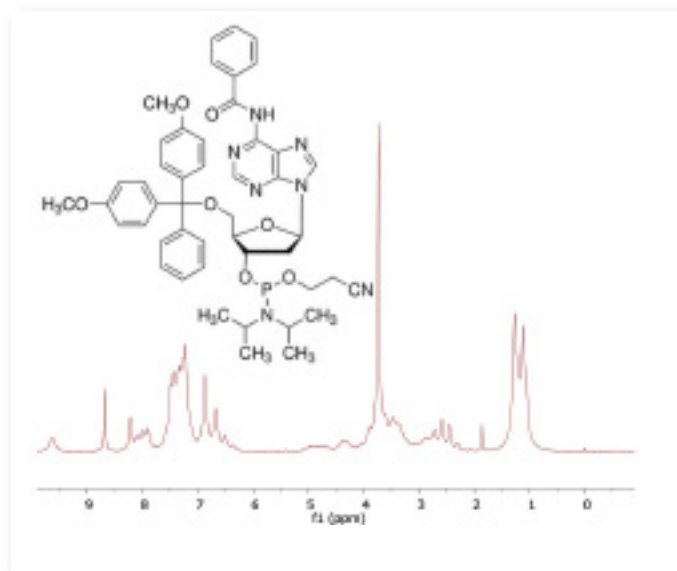
- No cryogenics
- Fast
- Convenient
- Low cost
- Accessible
- Robust
- Low maintenance
- Easy to operate
- Exceptional performance

## $^{31}\text{P}$ NMR Spectroscopy

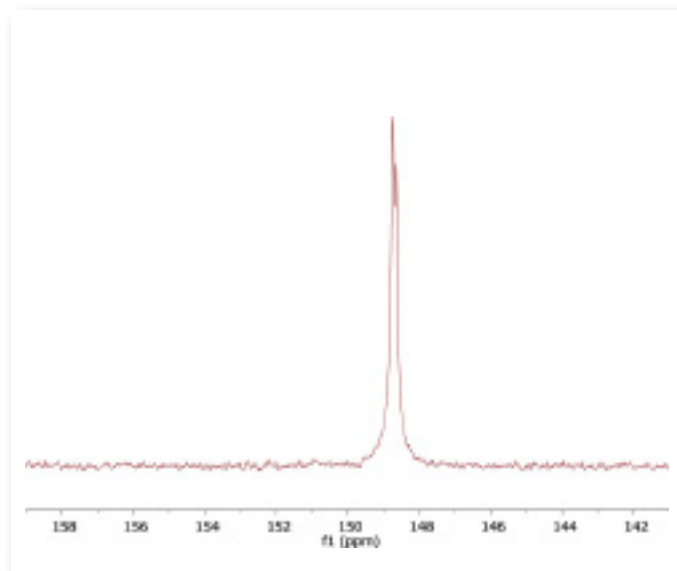
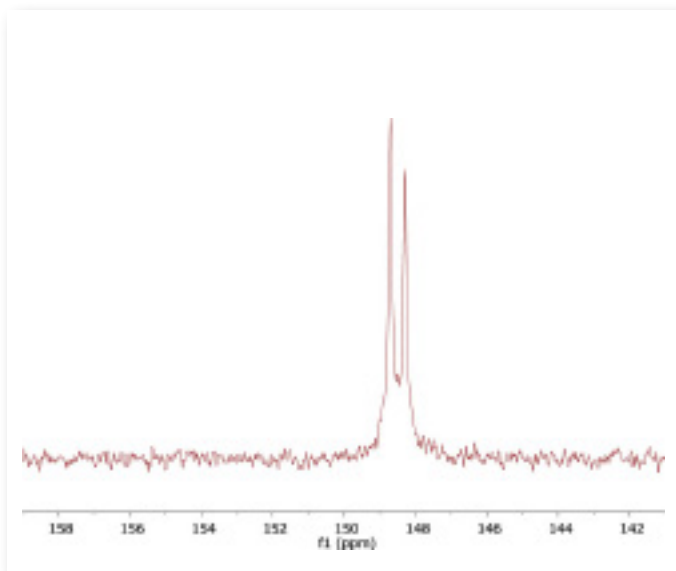
Example NMR Spectra of Phosphoramidites using Spinsolve Phosphorus.



dT Phosphoramidite



dA(bz) Phosphoramidite

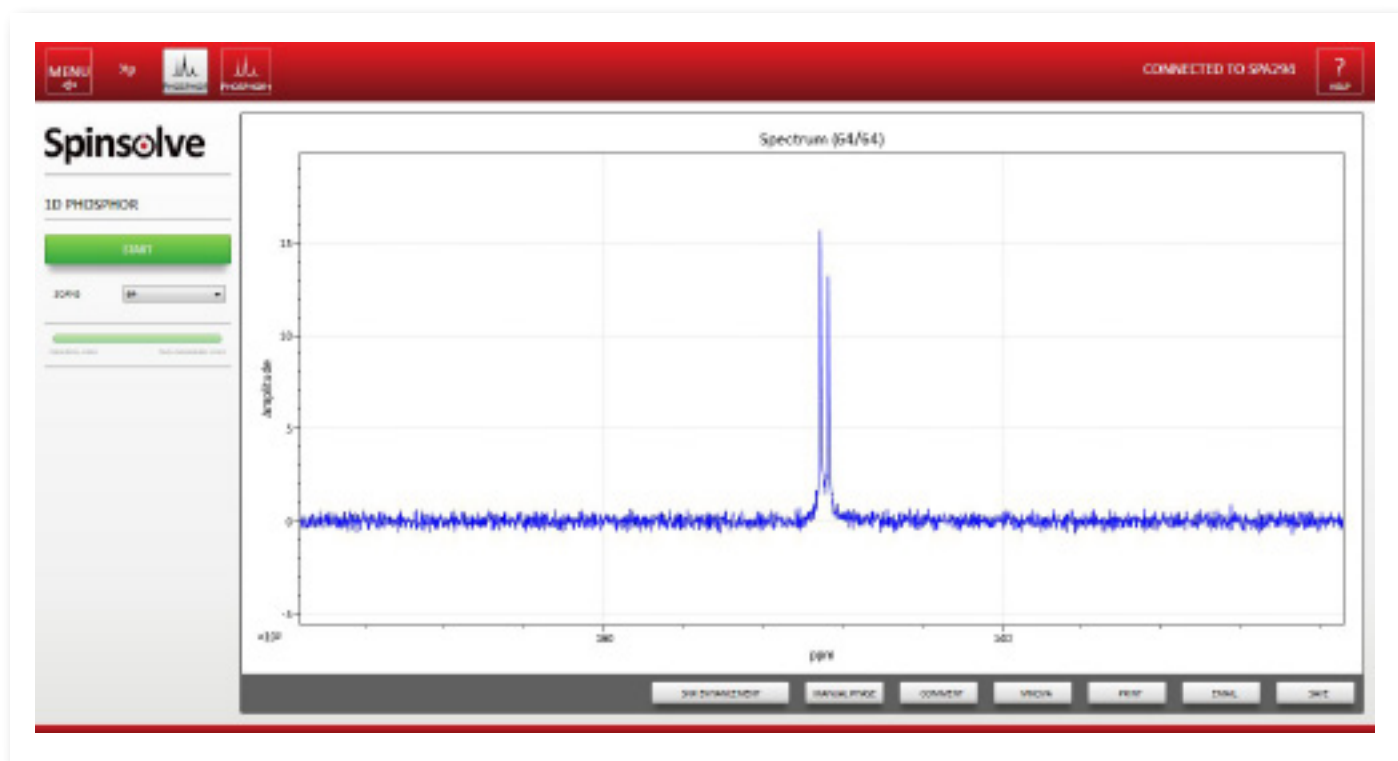


$^1\text{H}$  (top) and  $^{31}\text{P}$  (bottom) spectra of two phosphoramidite solutions (200 mM in  $\text{CDCl}_3$ ). These molecules play an important role in DNA synthesis. The measurement time for the  $^{31}\text{P}$  spectra was 7 minutes.

## Software

### The power of simplicity

- Uncomplicated one-button operation
- Simple intuitive graphical interface
- Automated and easy to use
- Minimal user controlled parameters
- Traditional NMR complexities are hidden



### Features

- 1D  $^1\text{H}$ ,  $^{19}\text{F}$  and  $^{31}\text{P}$  experiments
- Standard 5 mm NMR tubes
- 2D COSY and homonuclear j-resolved spectroscopy
- $T_1$  and  $T_2$  relaxation experiments
- Composite pulse decoupling



# Spinsolve<sup>®</sup> Phosphorus



## Specifications

- Frequency: 42.5 MHz Proton, 17.4 MHz Phosphorus
- <sup>1</sup>H Resolution: 50% linewidth < 0.7 Hz (16 ppb)
- <sup>1</sup>H Lineshape: 0.55% linewidth < 20 Hz
- Dimensions: 58 x 43 x 40 cm
- Weight: 55 kg
- Magnet: Permanent and cryogen free
- Stray field: < 2 G all around system



## Other Spinsolve products

### Spinsolve<sup>®</sup>



- <sup>1</sup>H and <sup>19</sup>F nuclei
- Relaxation time experiments
- 2D COSY and JRES
- Reaction monitoring

### Spinsolve<sup>®</sup> Carbon



- <sup>1</sup>H, <sup>19</sup>F and <sup>13</sup>C nuclei
- Spectral editing with DEPT
- Composite pulse decoupling
- 2D heteronuclear correlation experiments HETCOR, HMQC, HMBC, HSQC

Contact us now for a quote, or to arrange a demo or sample measurement.

### CONTACT INFORMATION

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