

SUPPORTING INFORMATION

Enzymatic desymmetrisation of prochiral phosphines and phosphine *P*-sulfides as a route to *P*-chiral catalysts

Lidia Madalińska, Piotr Kielbasiński and Małgorzata Kwiatkowska*

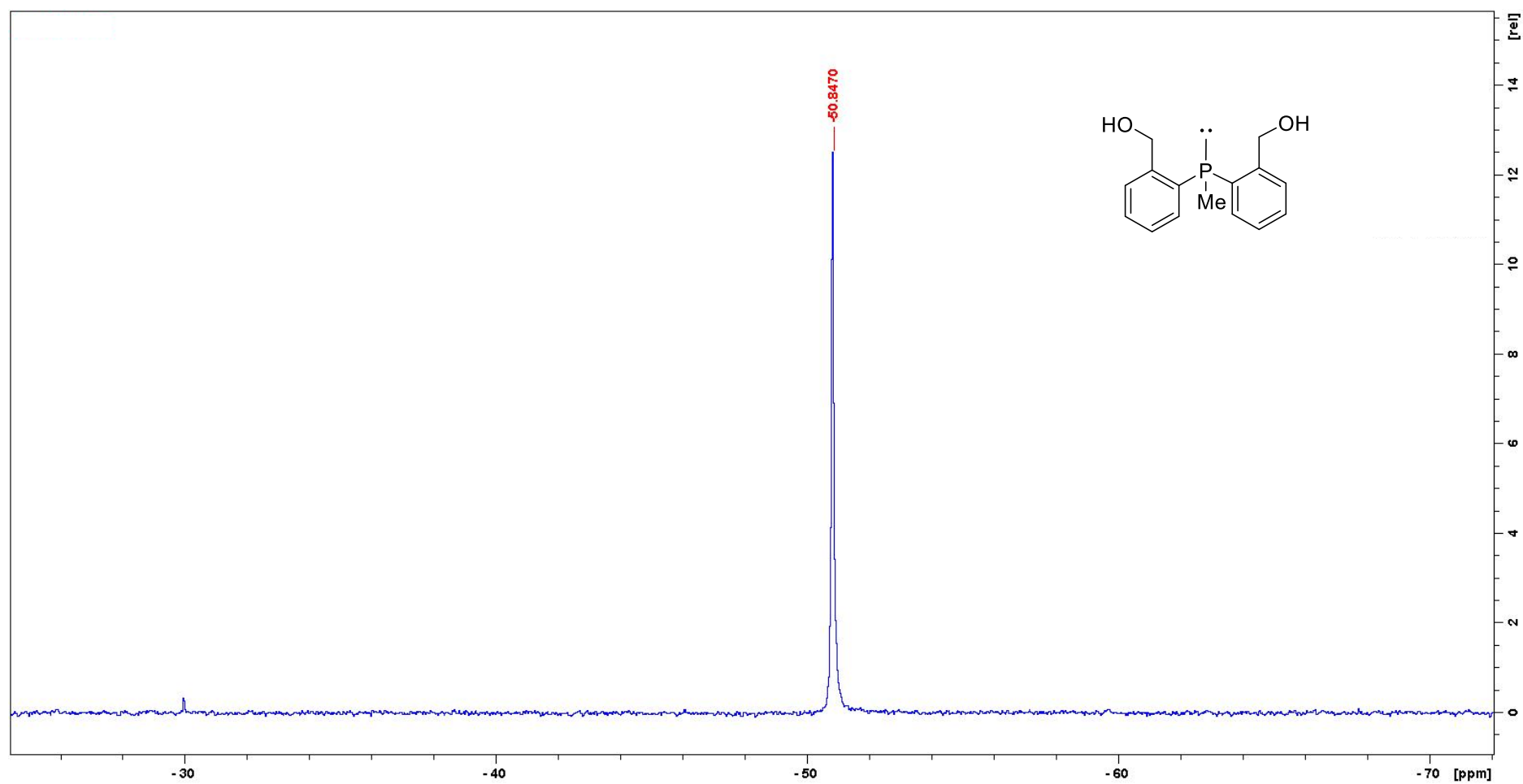
Division of Organic Chemistry, Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Sienkiewicza 112, 90-363 Łódź, Poland

E-mail: gosia@cbmm.lodz.pl

NMR SPECTRA

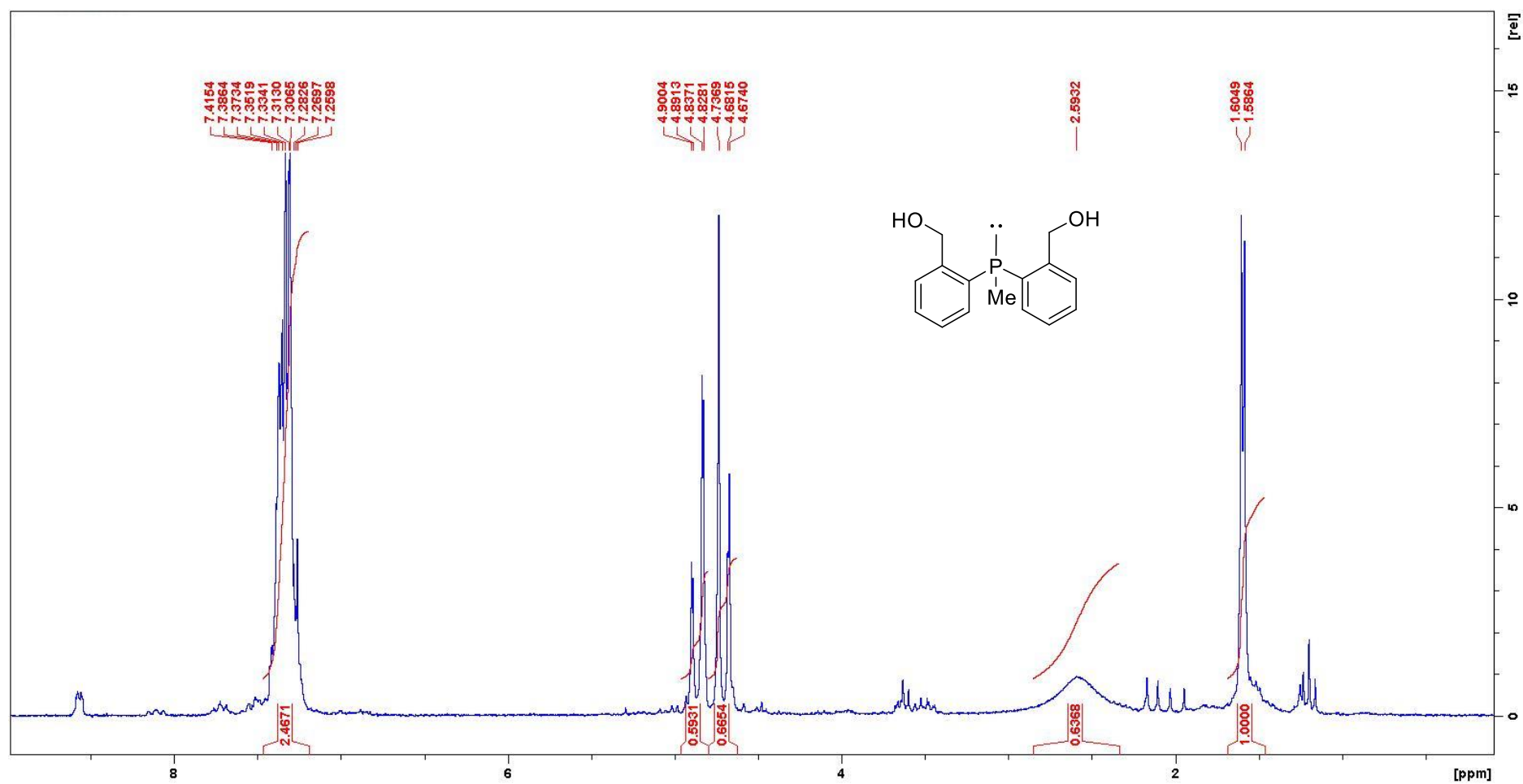
Bis(2-hydroxymethylphenyl)methylphosphine **12**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



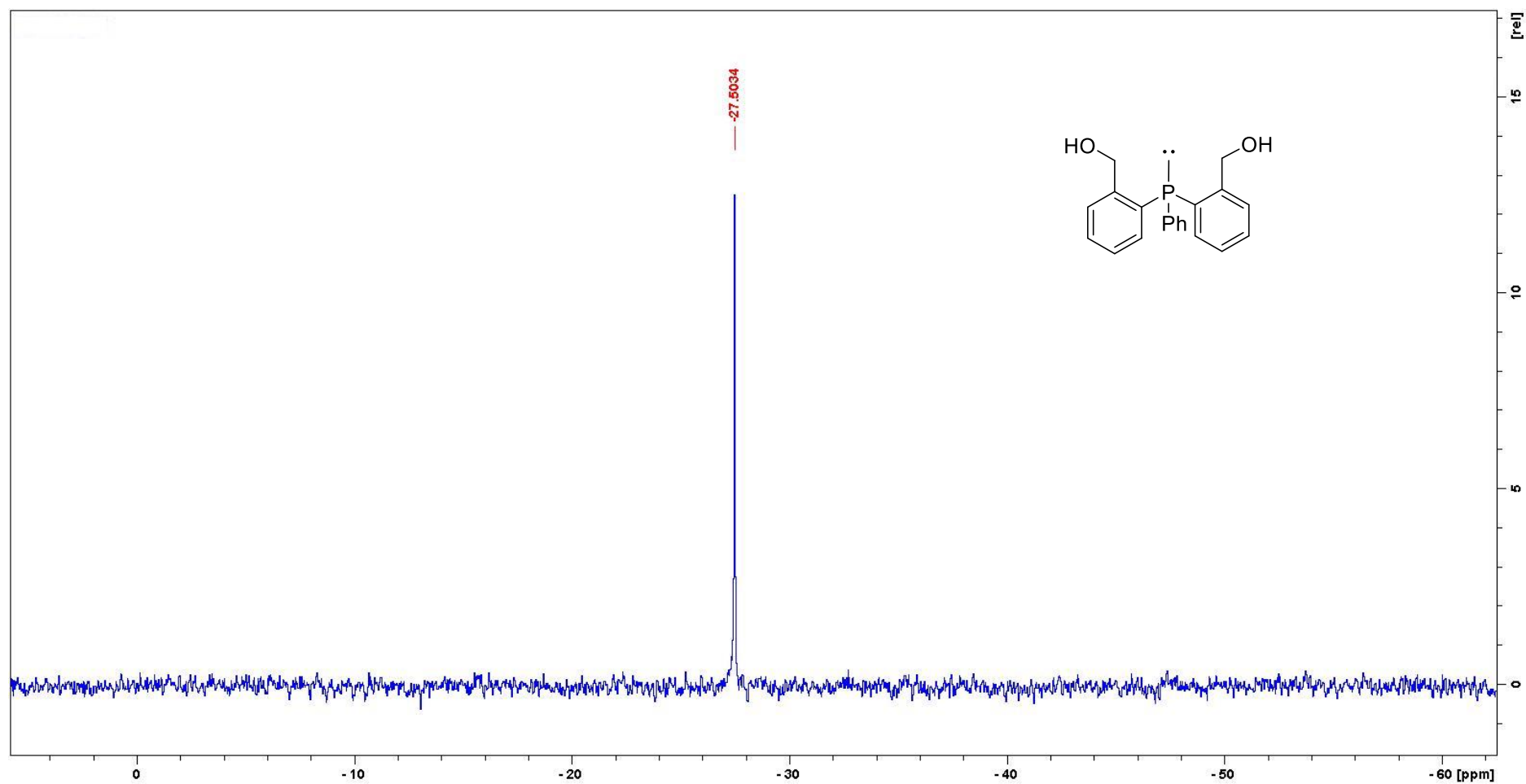
Bis(2-hydroxymethylphenyl)methylphosphine **12**

^1H NMR (CDCl_3 , 200 MHz)



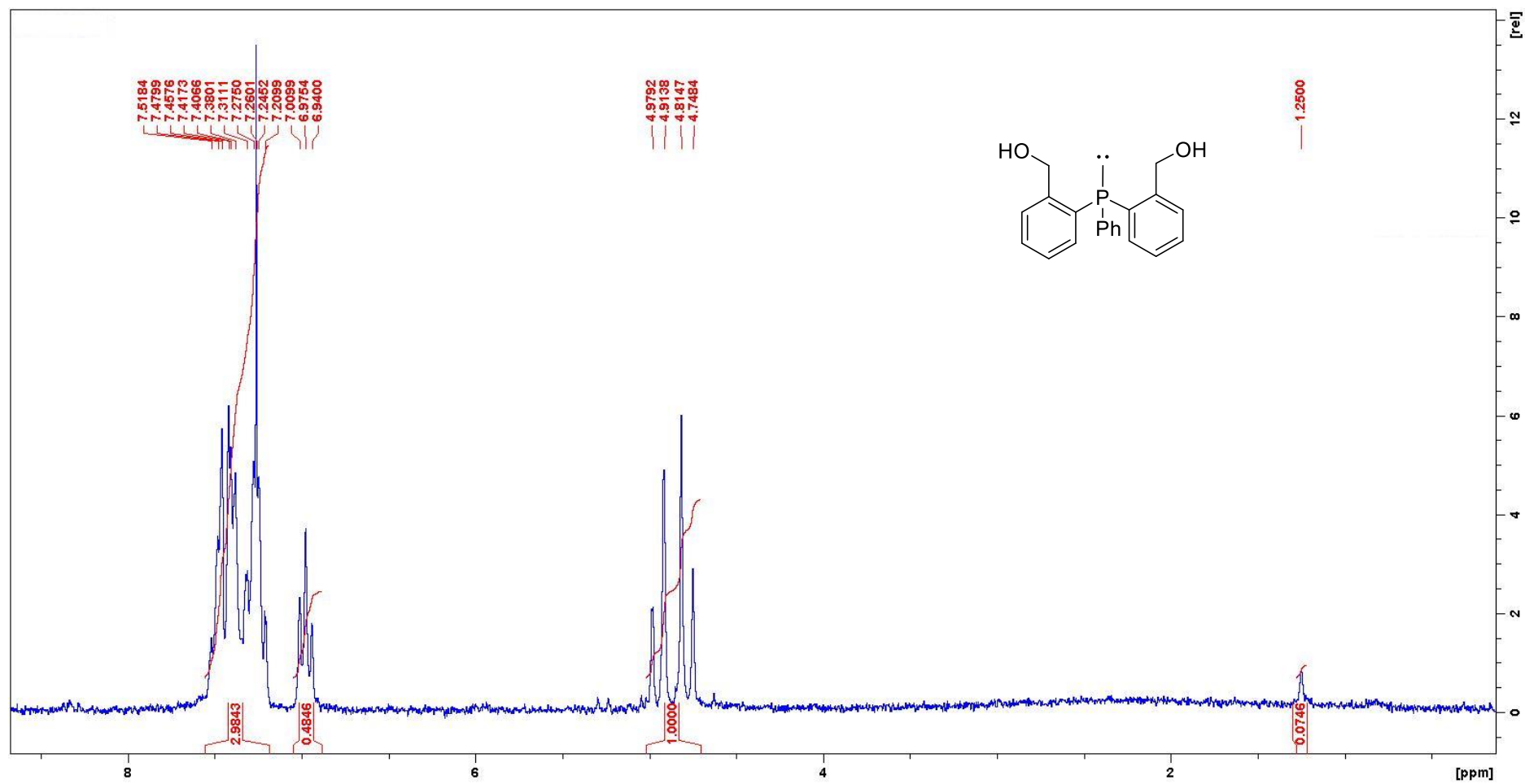
Bis(2-hydroxymethylphenyl)phenylphosphine **13**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



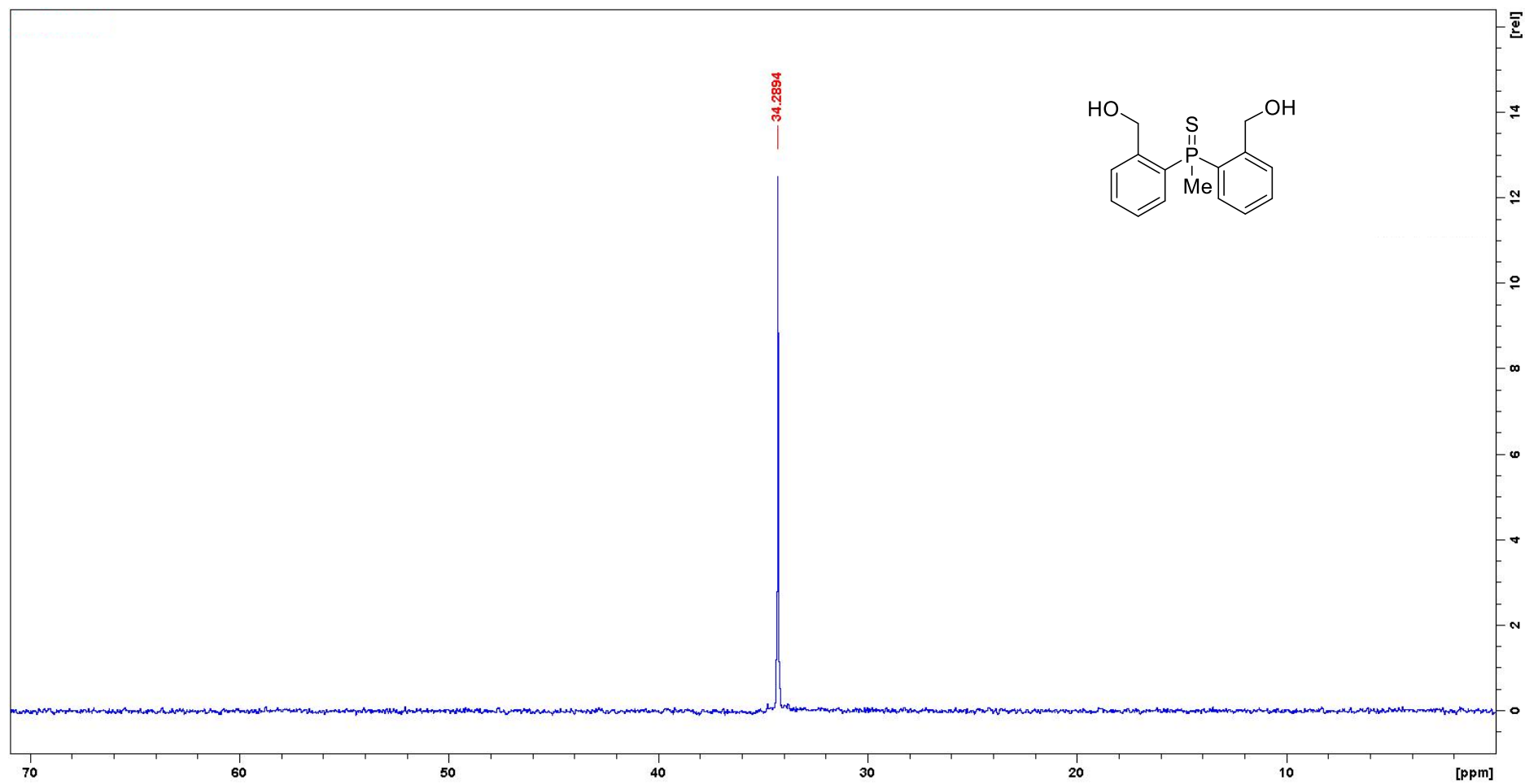
Bis(2-hydroxymethylphenyl)phenylphosphine **13**

^1H NMR (CDCl_3 , 200 MHz)



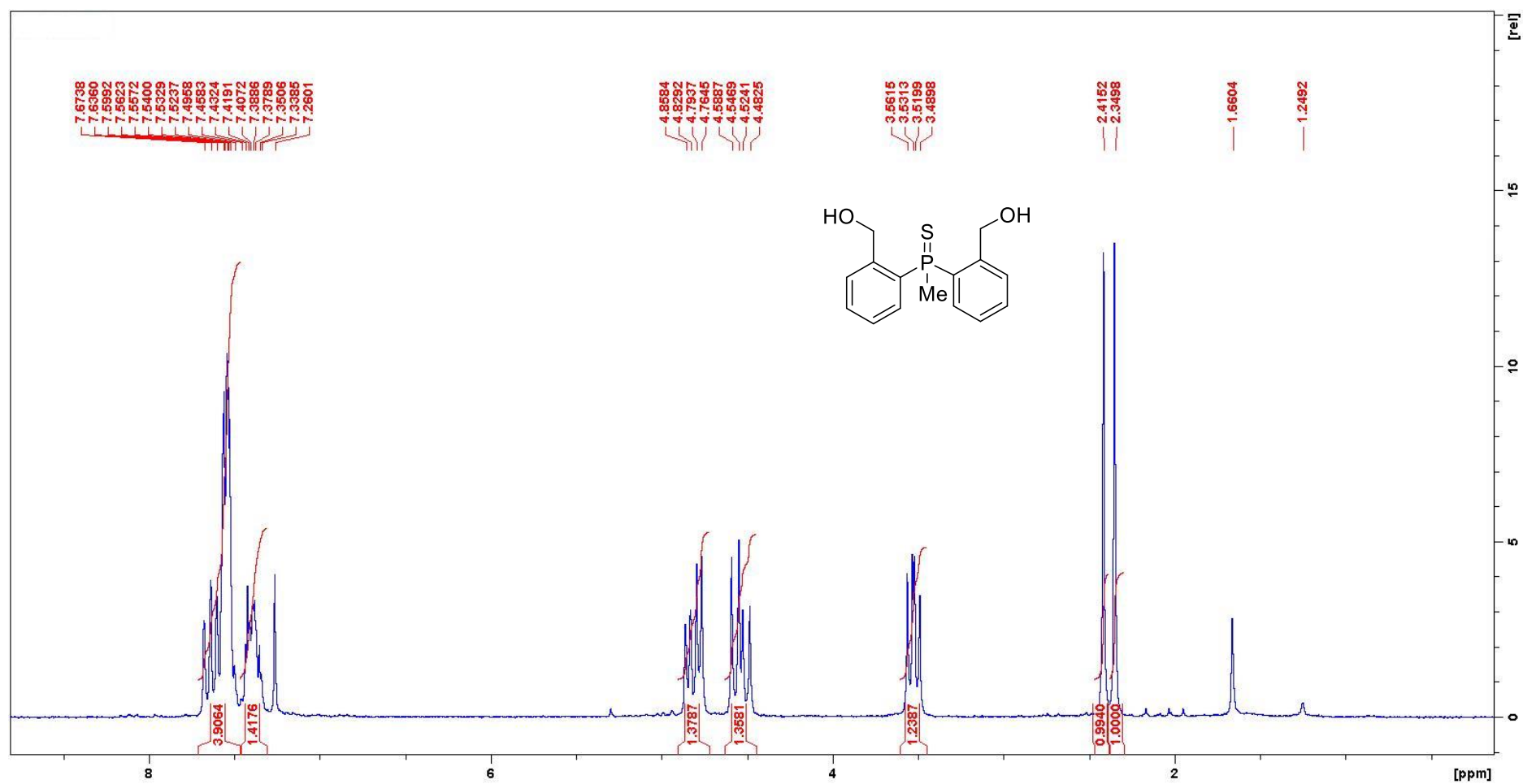
Bis(2-hydroxymethylphenyl)methylphosphine sulfide **22**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



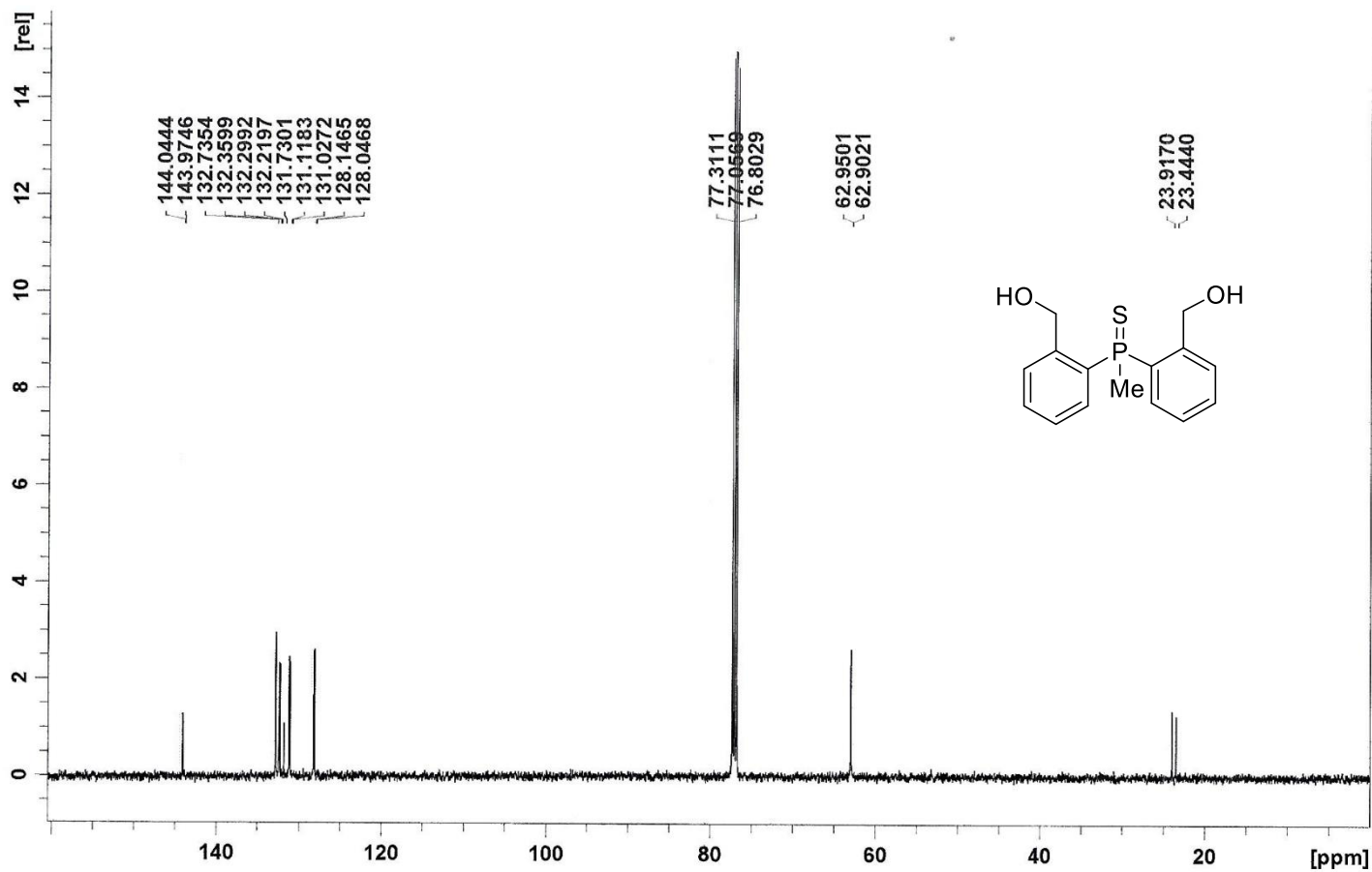
Bis(2-hydroxymethylphenyl)methylphosphine sulfide **22**

^1H NMR (CDCl_3 , 200 MHz)



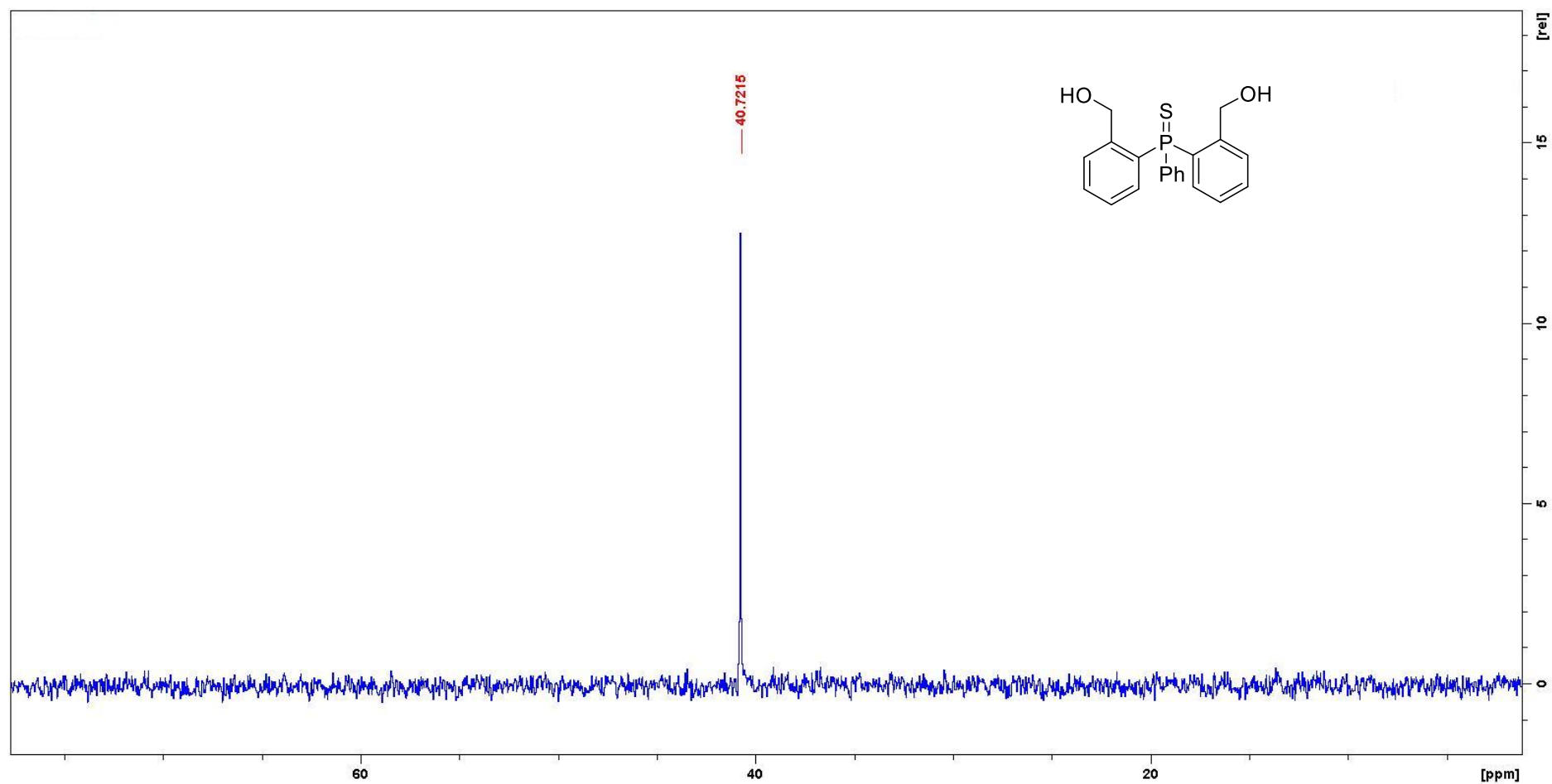
Bis(2-hydroxymethylphenyl)methylphosphine sulfide **22**

$^{13}\text{C}\{^1\text{H}\}$ NMR (CDCl_3 , 126 MHz)



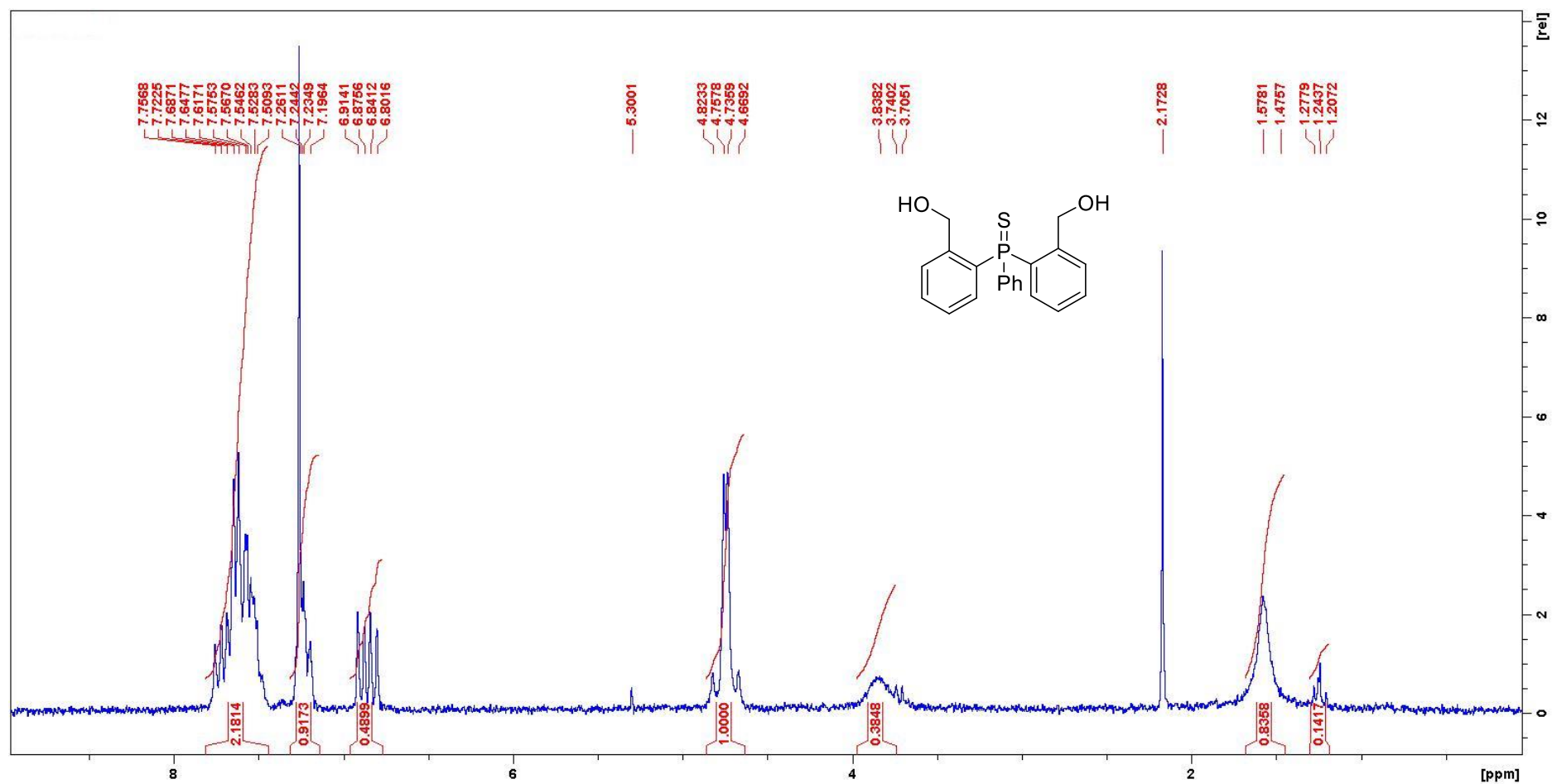
Bis(2-hydroxymethylphenyl)phenylphosphine sulfide **23**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



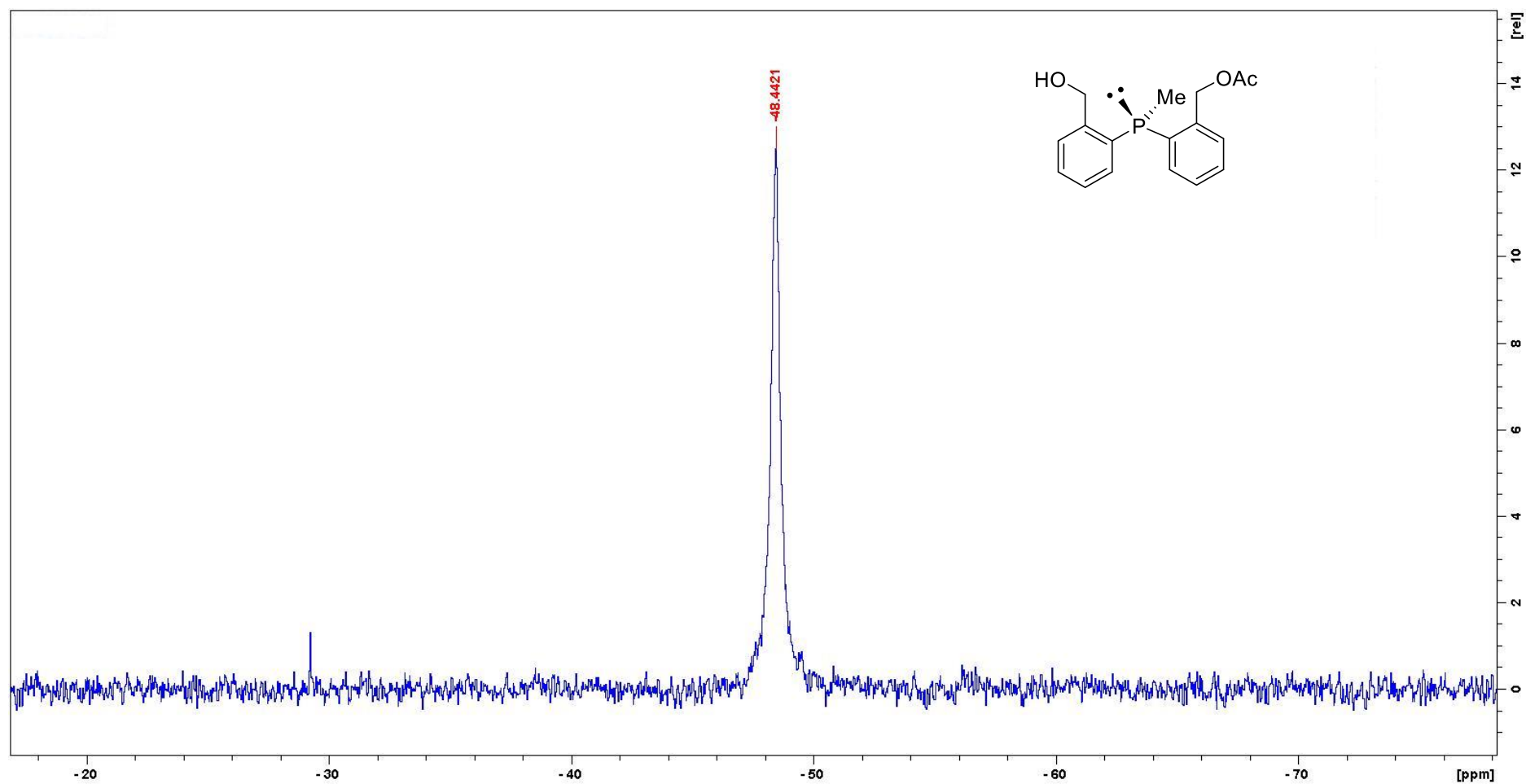
Bis(2-hydroxymethylphenyl)phenylphosphine sulfide **23**

^1H NMR (CDCl_3 , 200 MHz)



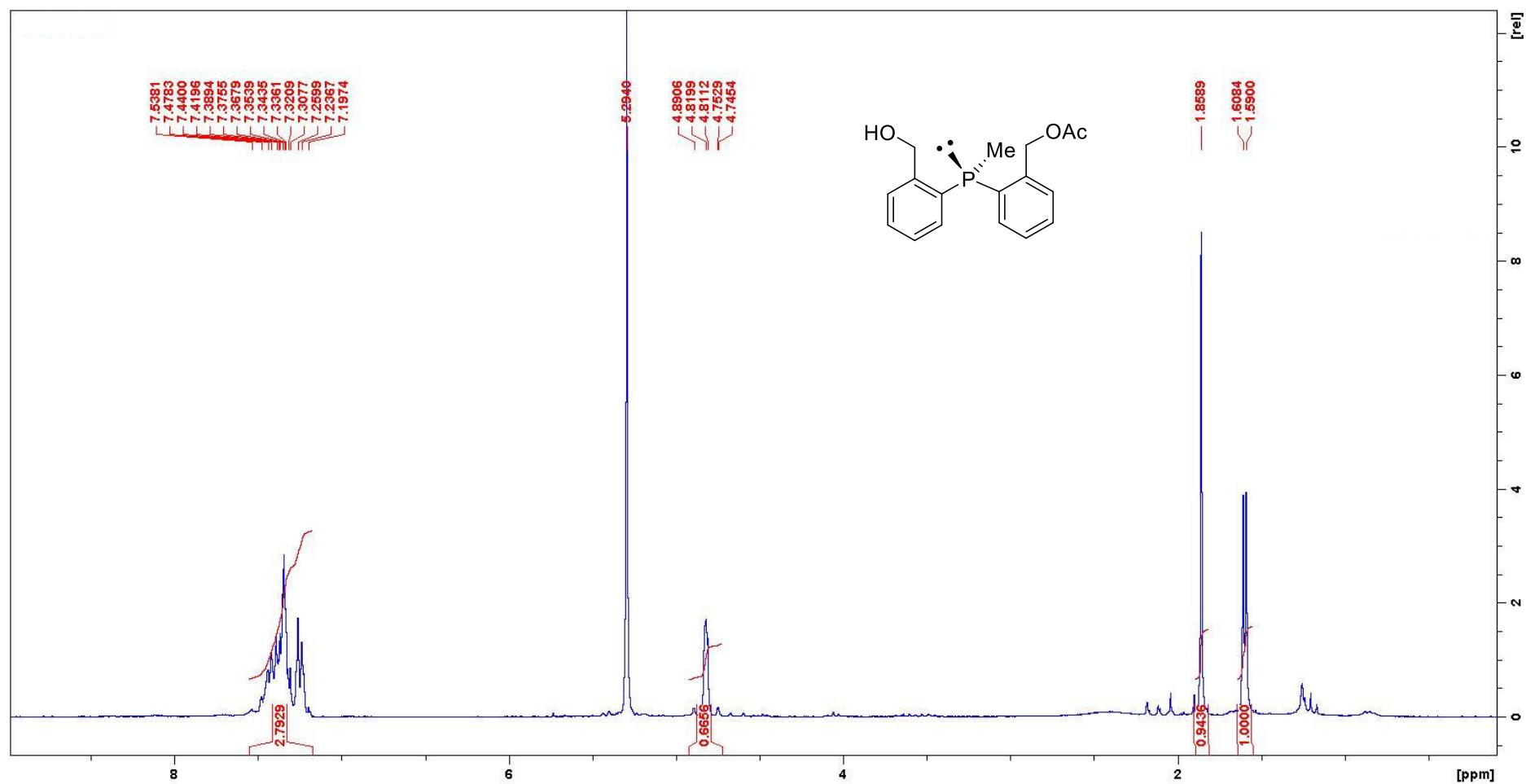
(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)methylphosphine **14**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



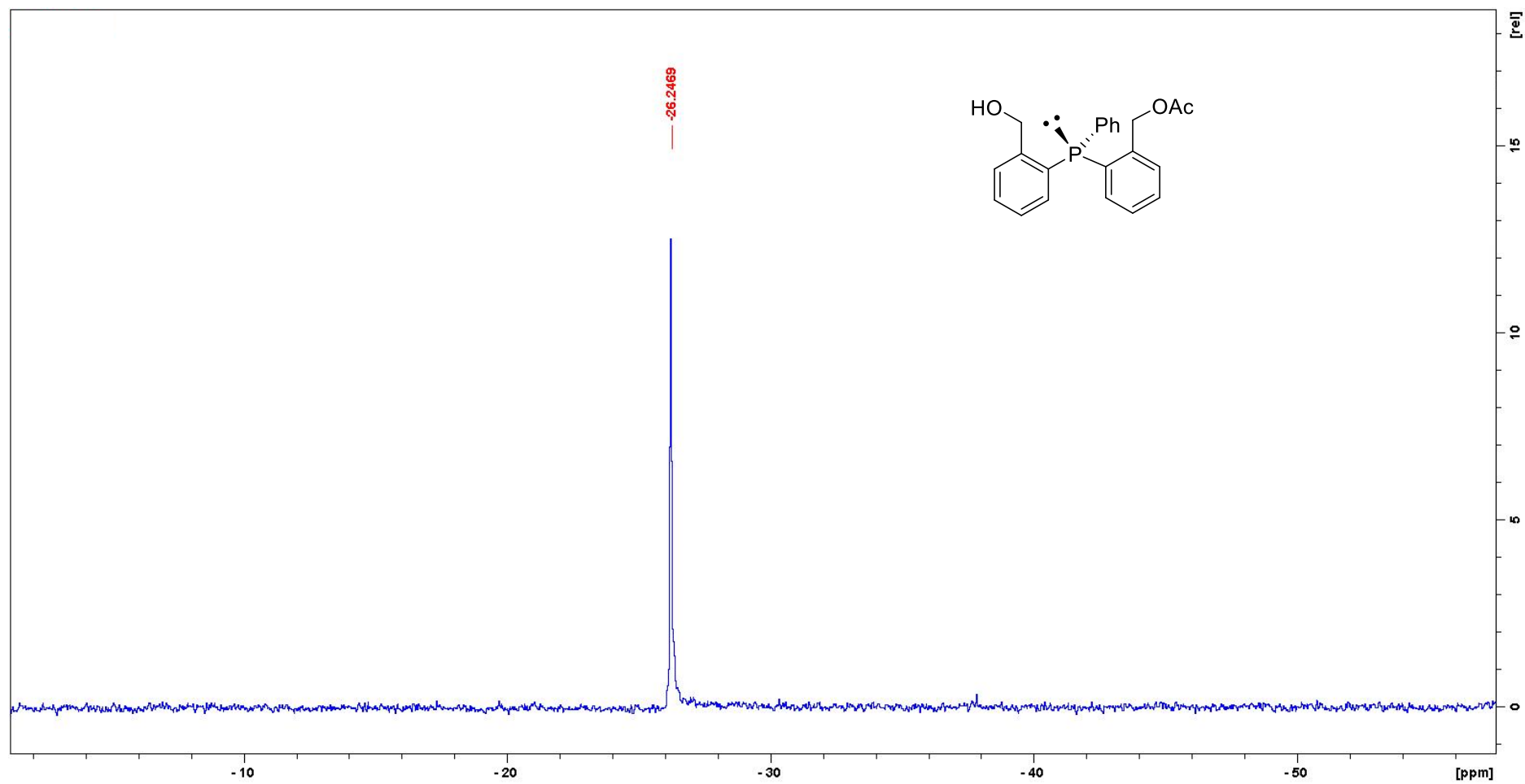
(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)methylphosphine **14**

^1H NMR (CDCl_3 , 200 MHz)



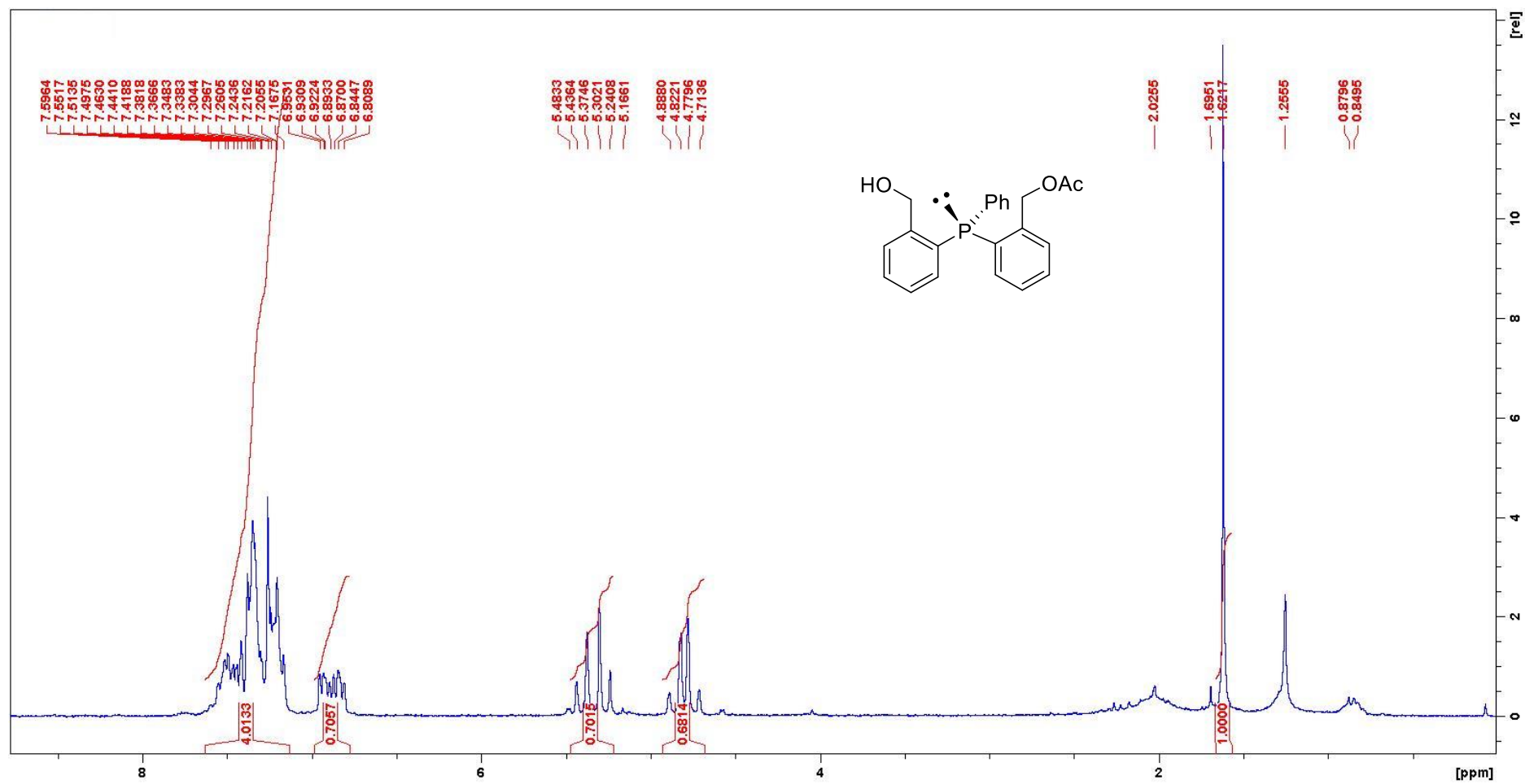
(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)phenylphosphine **15**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



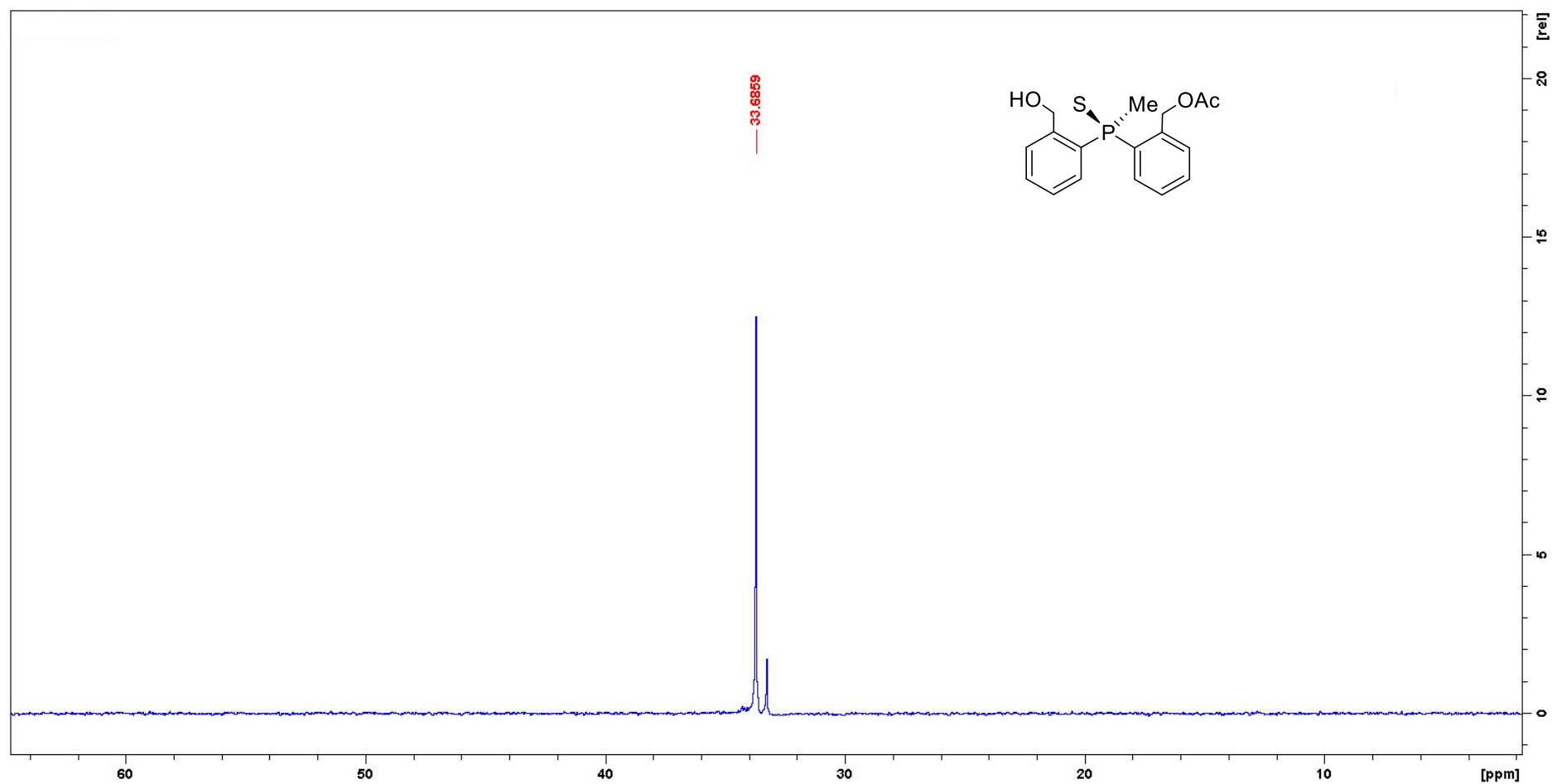
(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)phenylphosphine **15**

^1H NMR (CDCl_3 , 200 MHz)



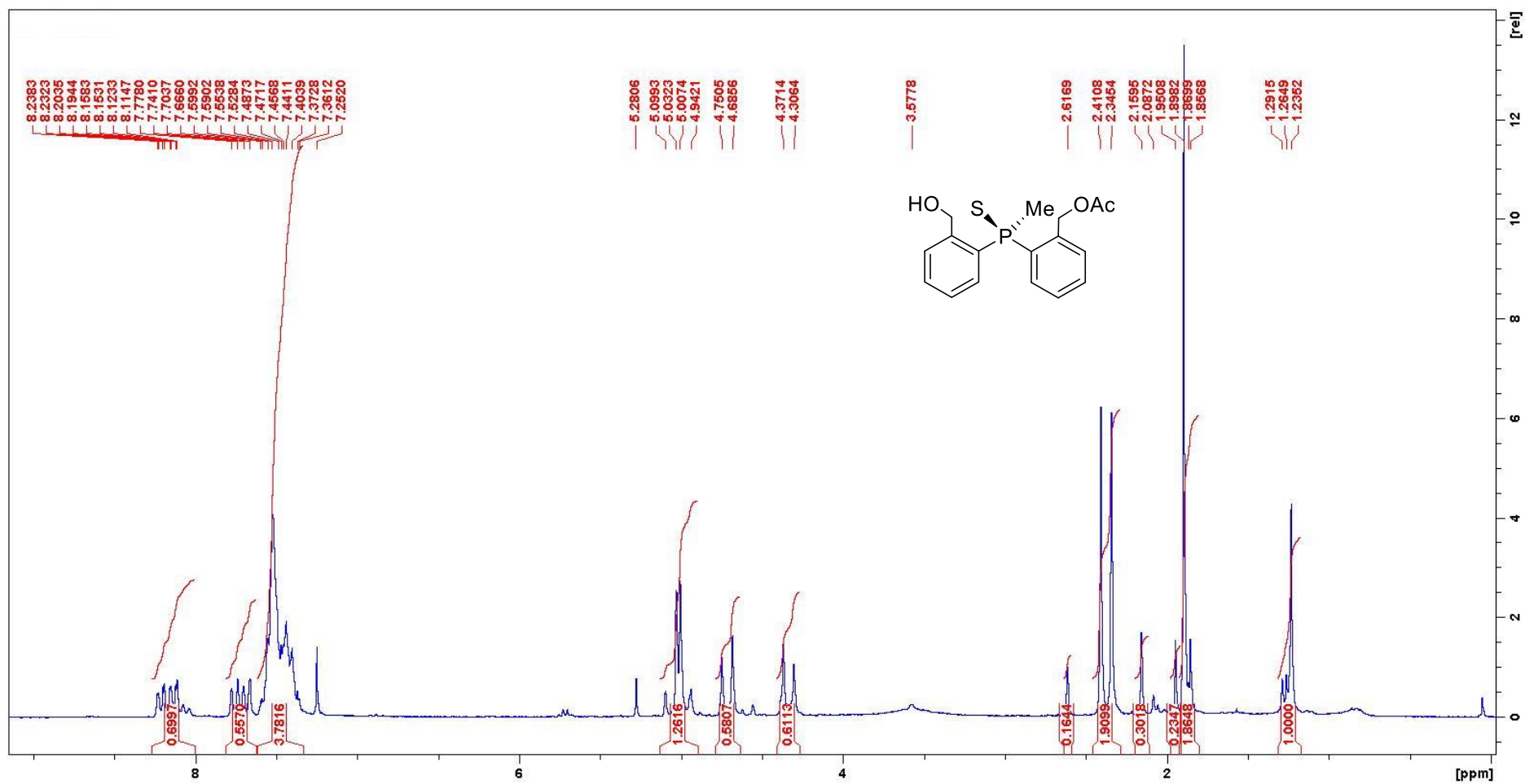
(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)methylphosphine sulfide **24**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



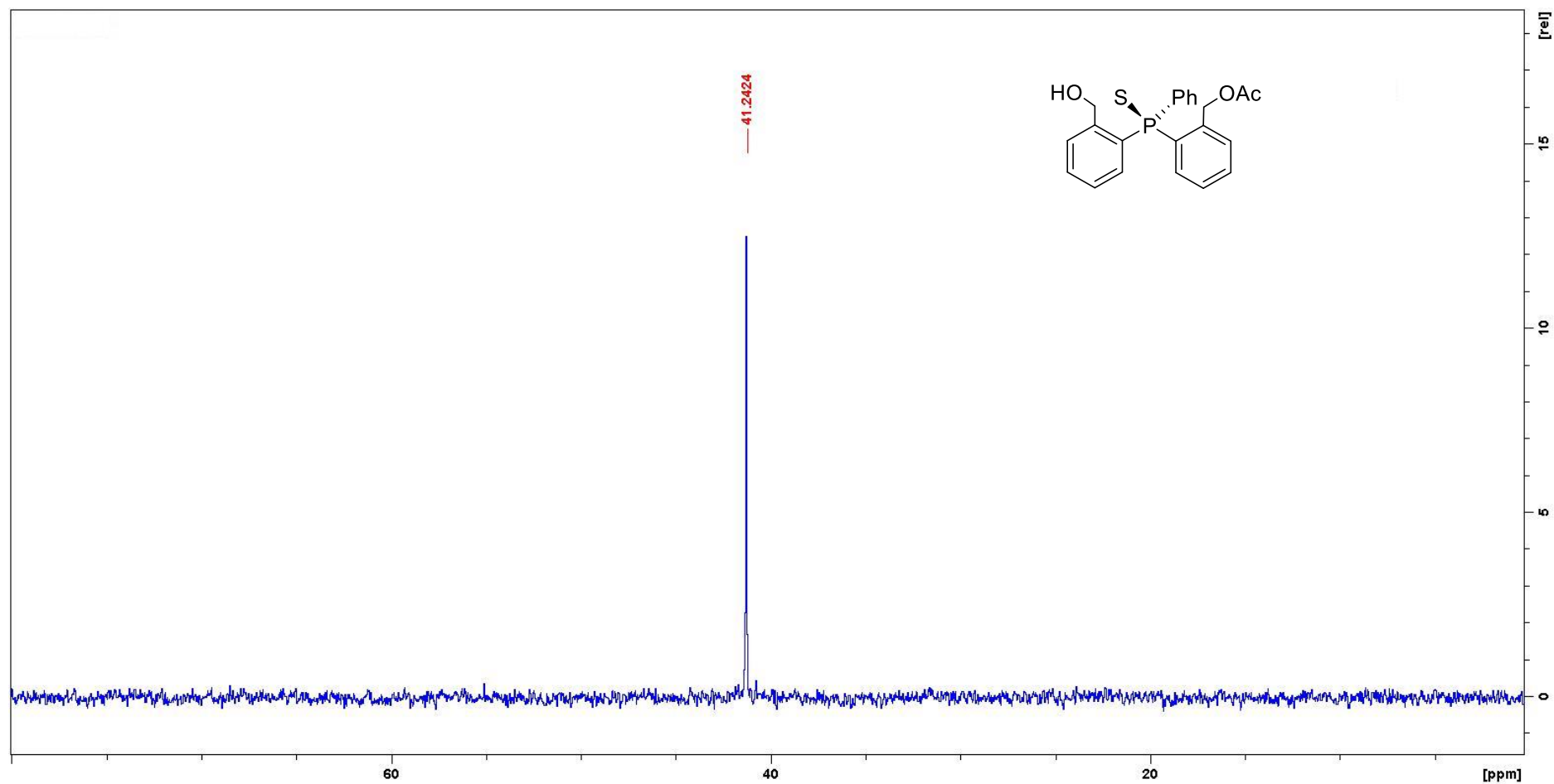
(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)methylphosphine sulfide **24**

^1H NMR (CDCl_3 , 200 MHz)



(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)phenylphosphine sulfide **25**

$^{31}\text{P}\{^1\text{H}\}$ NMR (CDCl_3 , 81 MHz)



(2-acetoxymethylphenyl)(2'-hydroxymethylphenyl)phenylphosphine sulfide **25**

^1H NMR (CDCl_3 , 200 MHz)

