Supplementary Material

An efficient synthesis of optically active herbicide (*S*)-metolachlor *via* reductive ring opening of 2-methoxymethylaziridine

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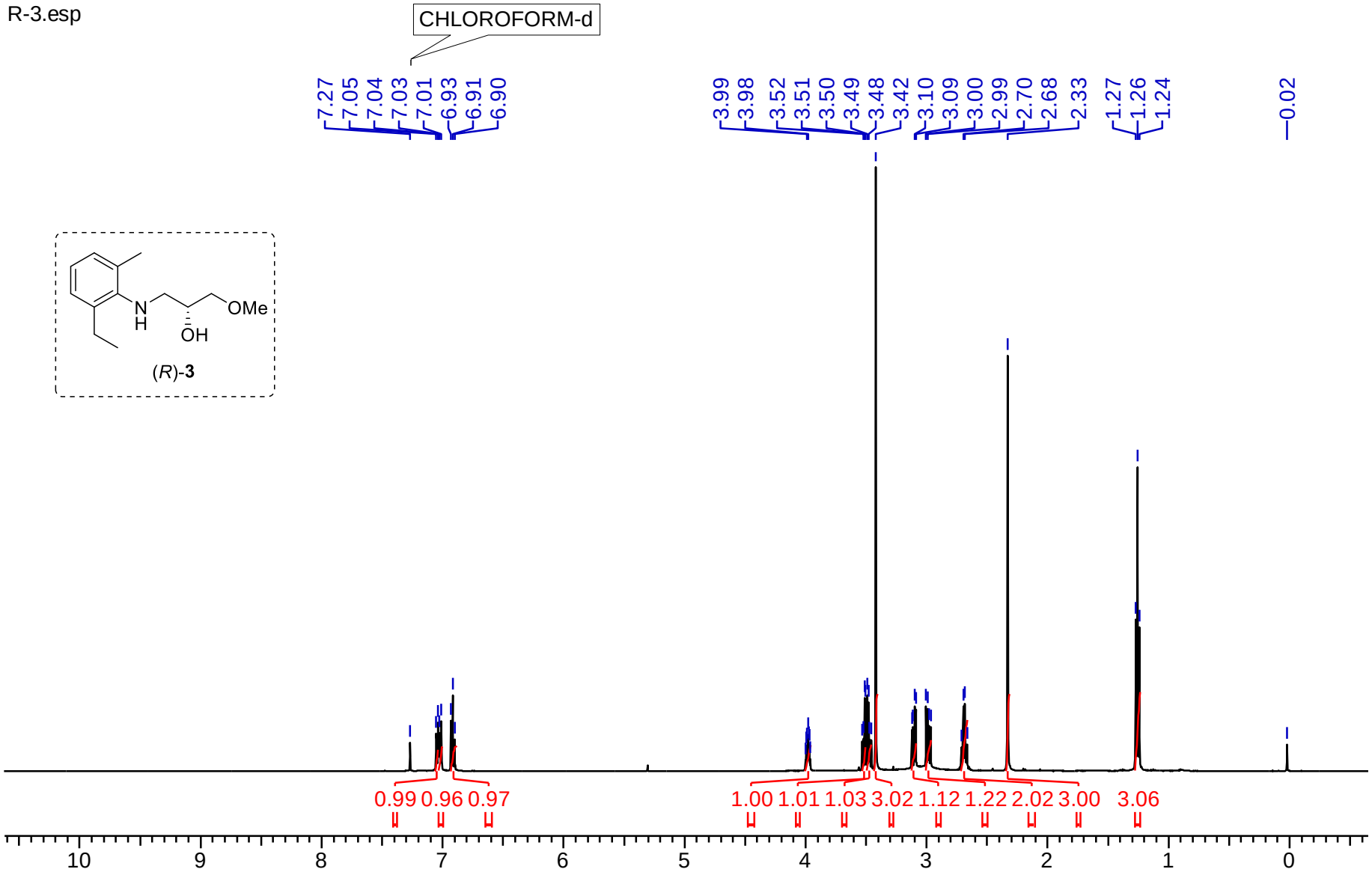
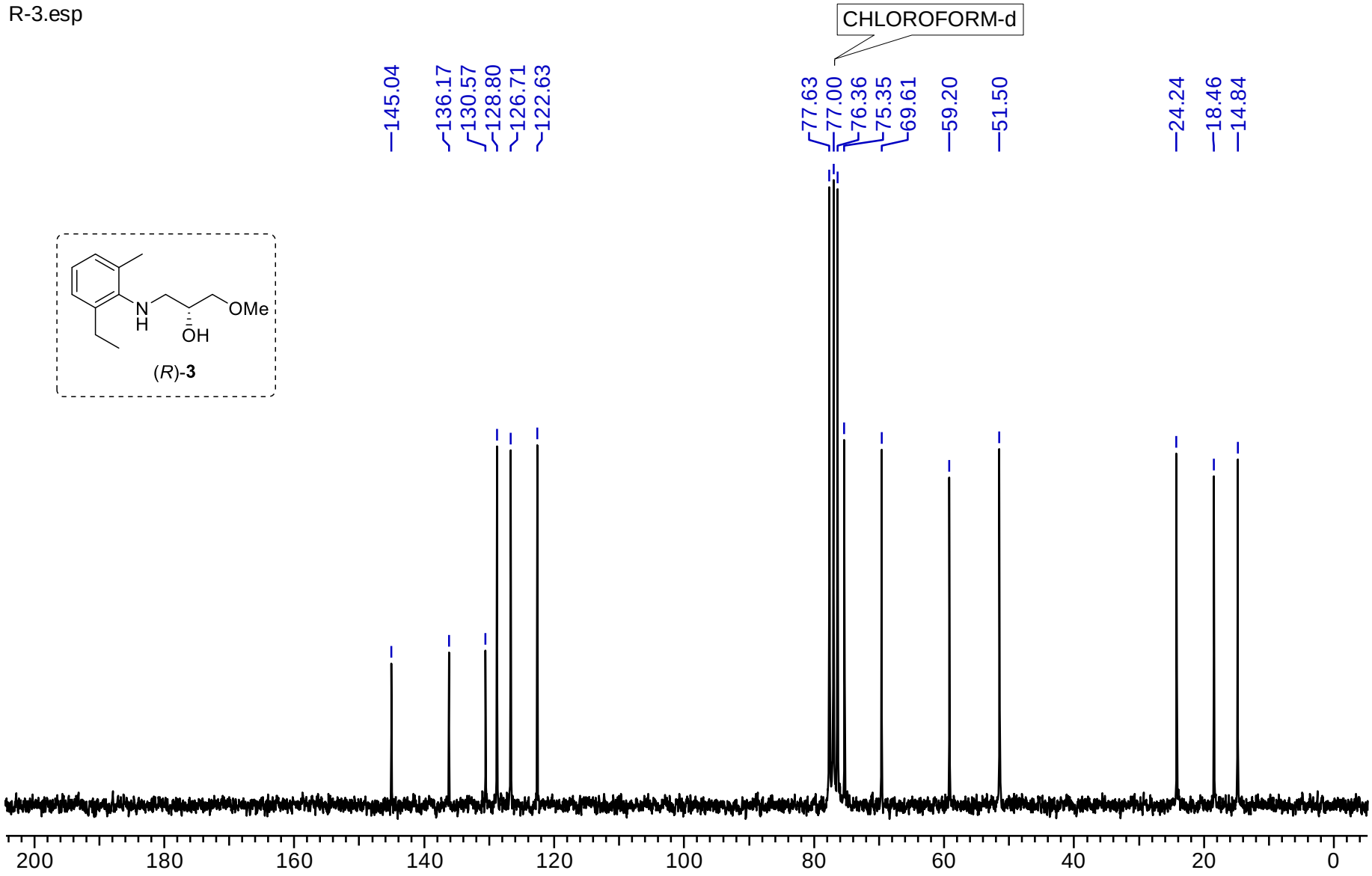
Table of Contents

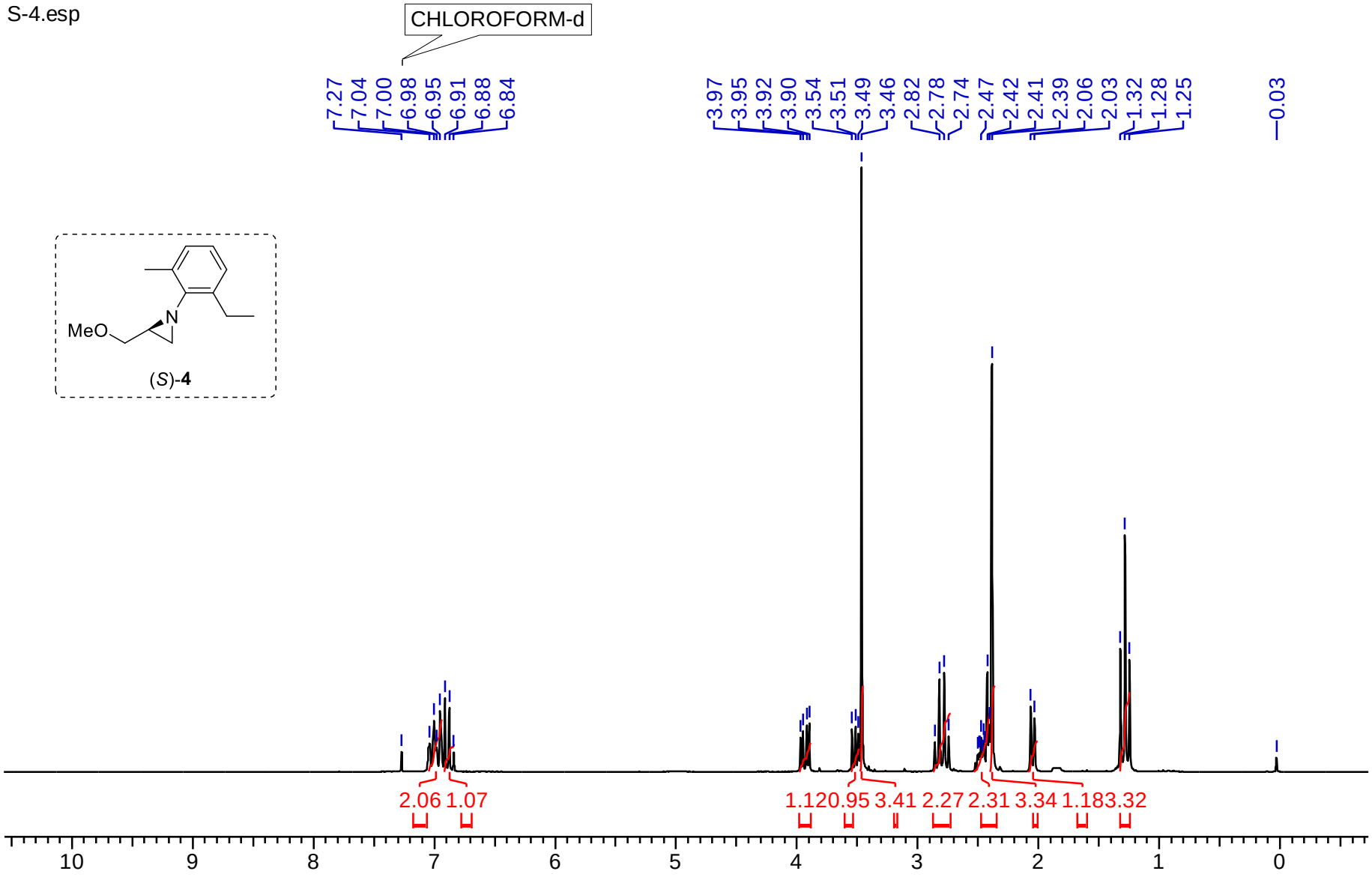
^{1}H NMR (500 MHz, $CDCl_3$) of compound ***(R)*-3:**



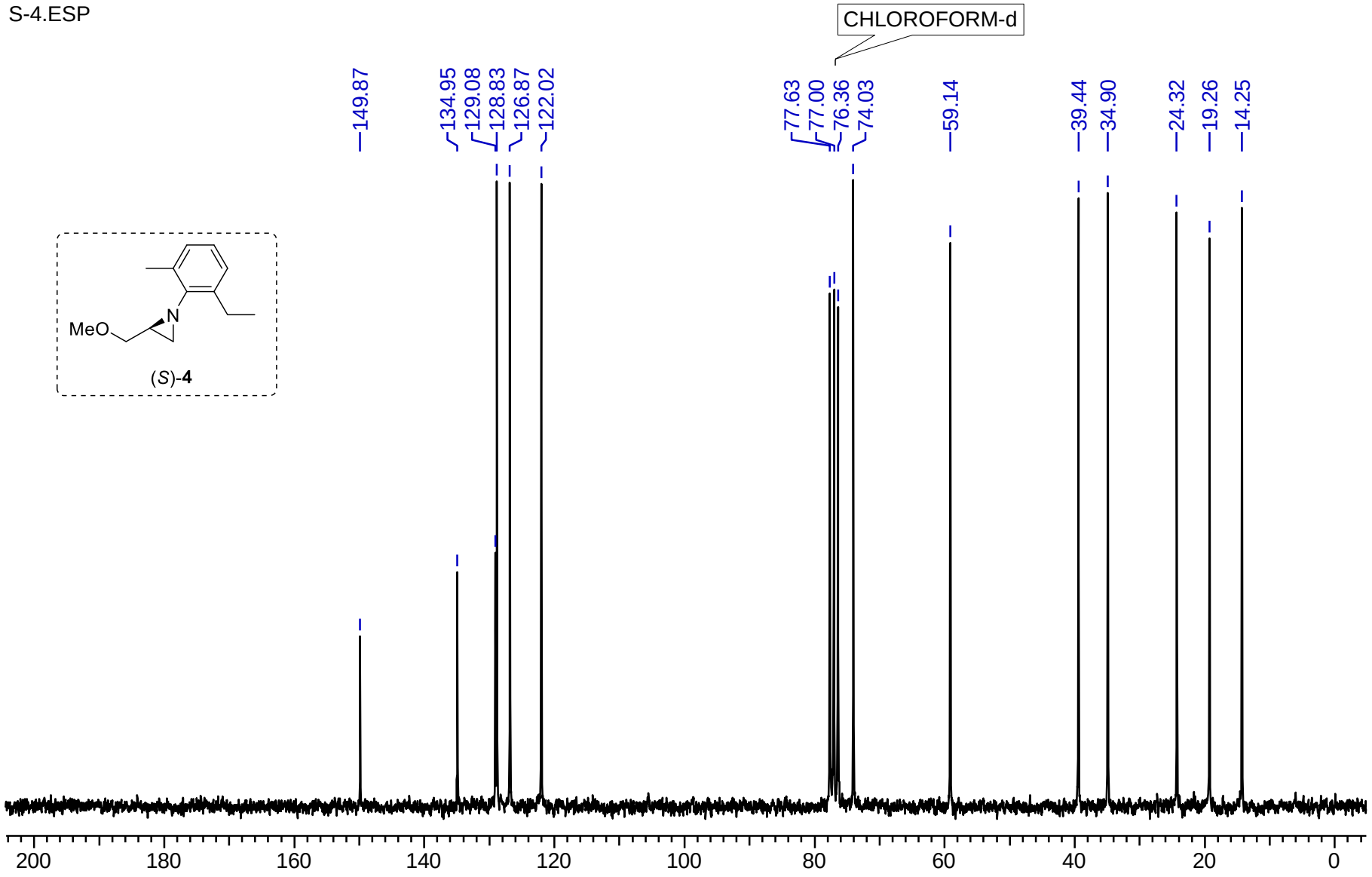
^{13}C NMR (50 MHz, $CDCl_3$) of compound ***(R)*-3:**



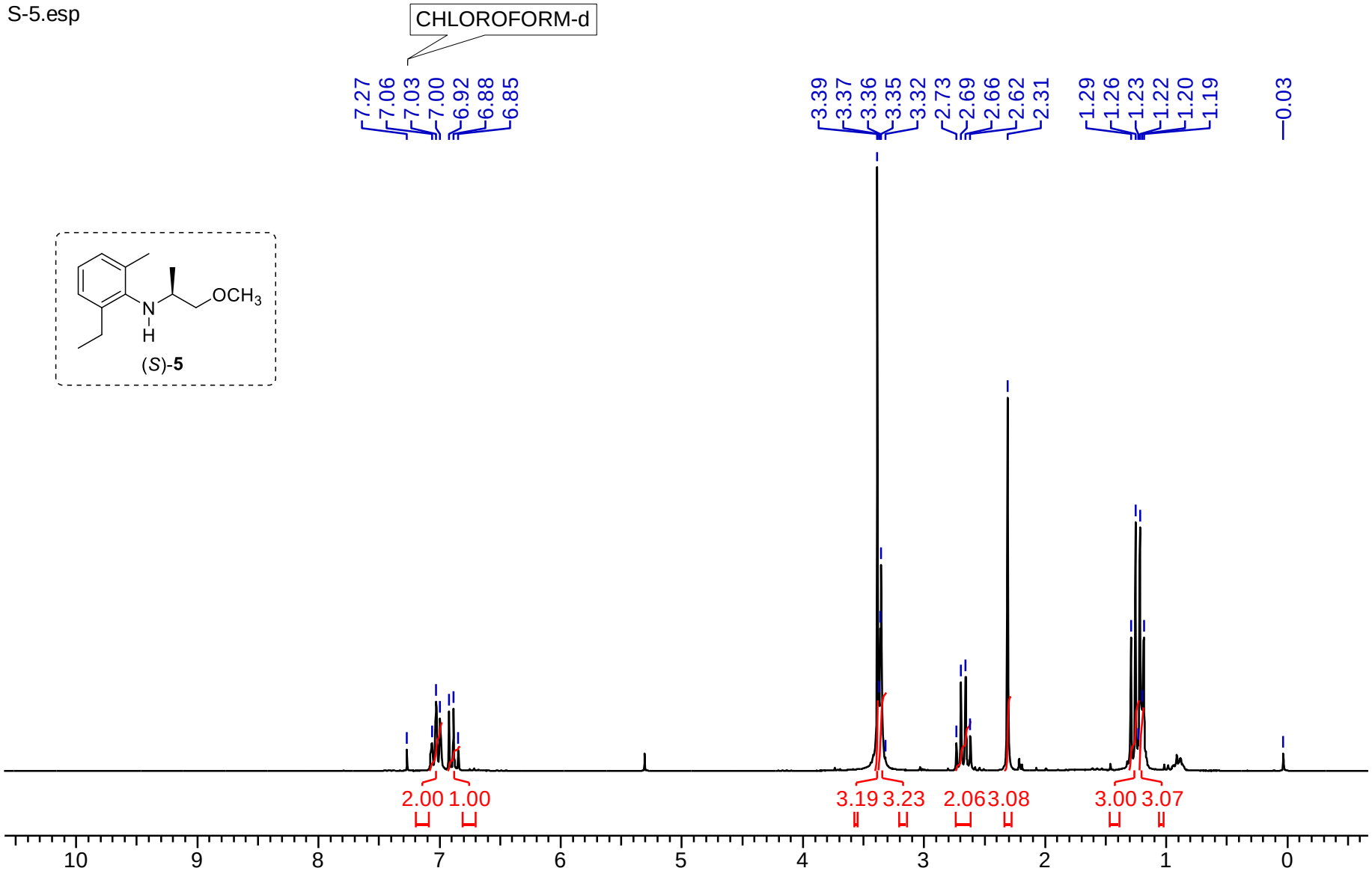
^{1}H NMR (200 MHz, $CDCl_3$) of compound ***(S)*-4:**



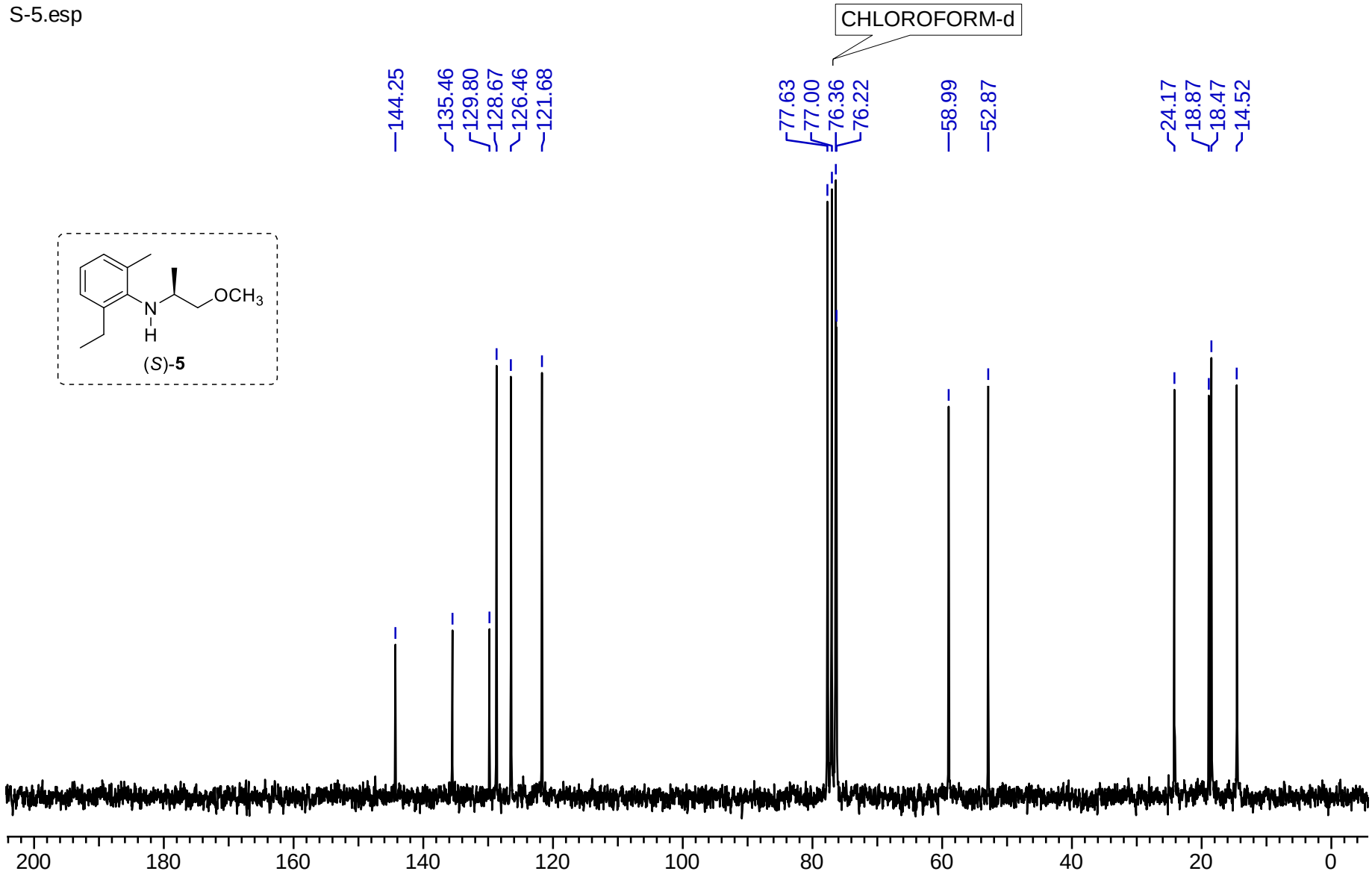
^{13}C NMR (50 MHz, $CDCl_3$) of compound ***(S)*-4:**



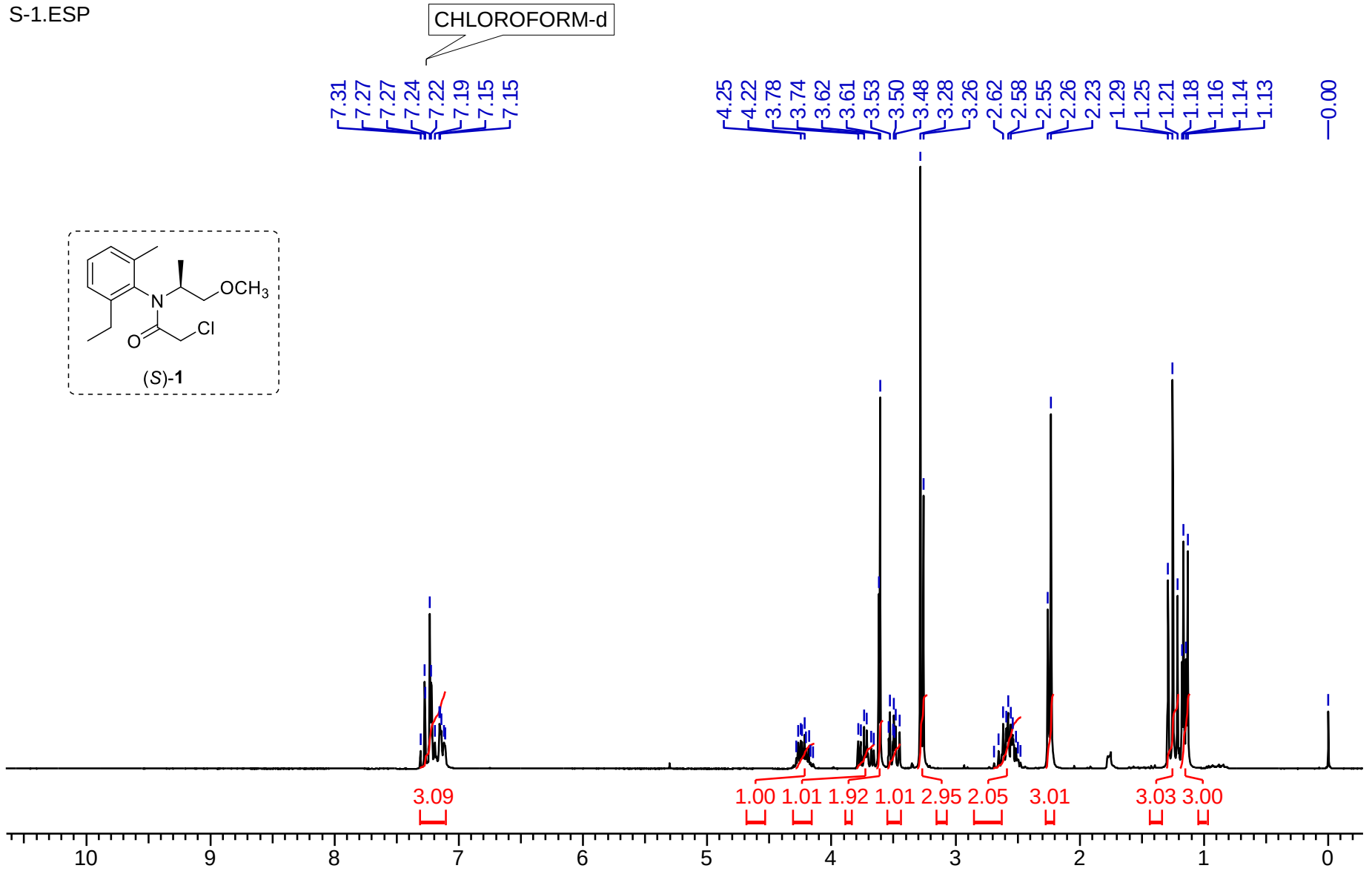
^{1}H NMR (200 MHz, $CDCl_3$) of compound ***(S)*-5:**



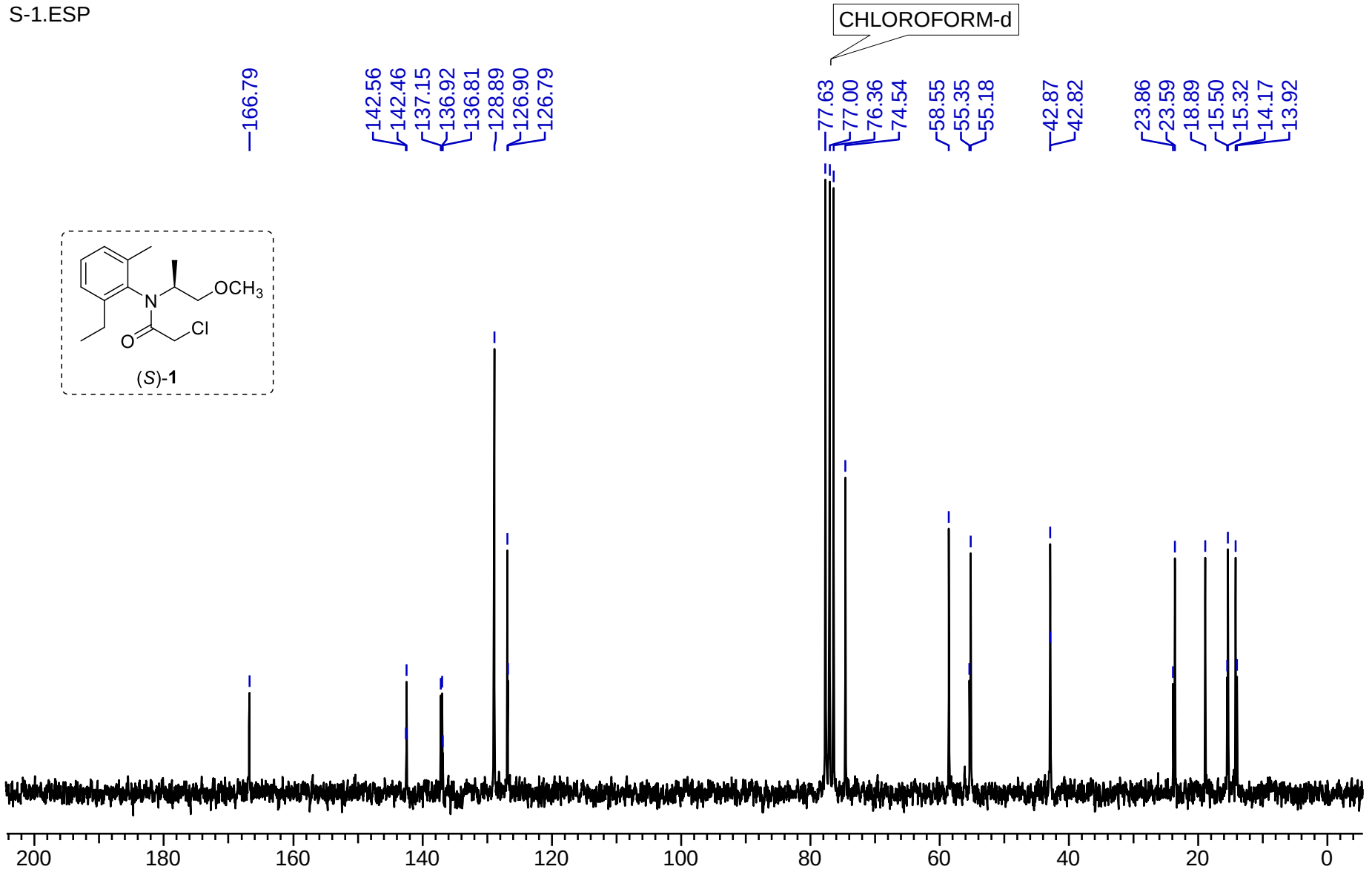
^{13}C NMR (50 MHz, $CDCl_3$) of compound ***(S)*-5:**



^{1}H NMR (200 MHz, $CDCl_3$) of compound ***(S)*-1:**

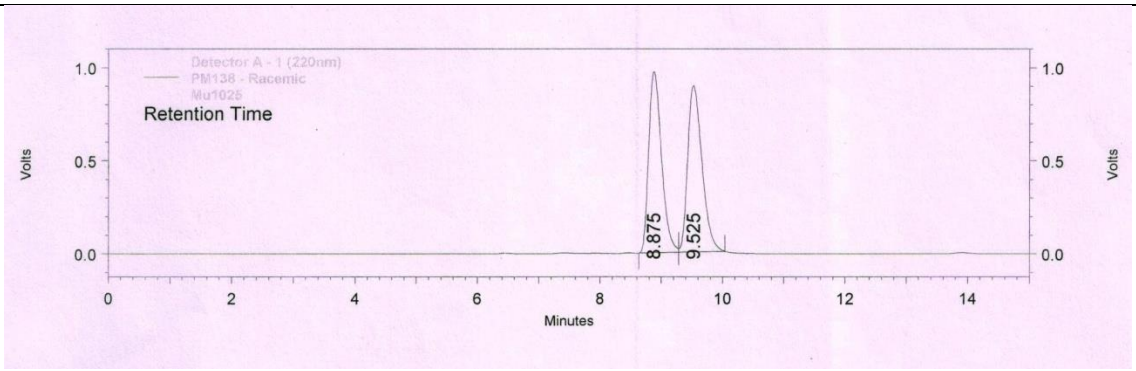


^{13}C NMR (50 MHz, $CDCl_3$) of compound ***(S)*-1:**



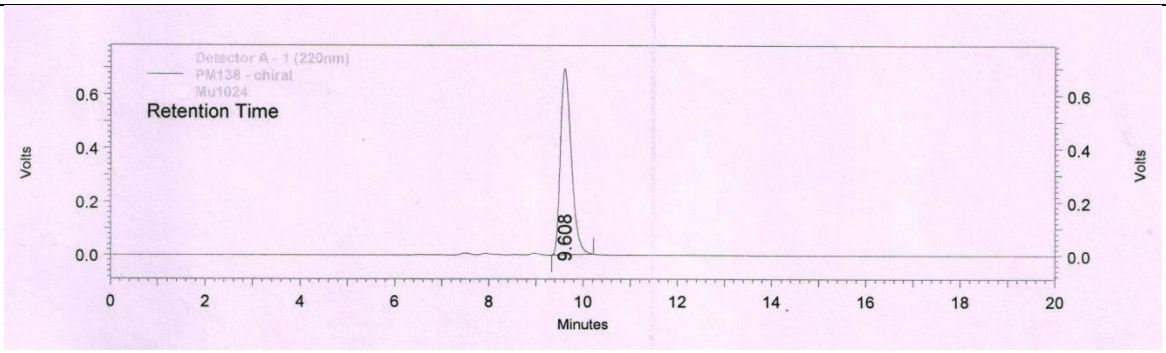
Chiral HPLC analysis of Compound (*S*)-5:

Conditions: Chiralcel OD-H (250 X 4.6 mm) column; eluent: n-Hexane/isopropanol (99.75:0.25); flow rate: 0.5mL/min; detector 220 nm.



Racemic Sample Chromatograph

Pk #	Retention Time (mins)	Area	Area %
1	**8.875**	**14342294**	**49.725**
2	**9.525**	**14500801**	**50.275**
Totals			



Chiral Sample Chromatograph

Pk #	Retention Time (mins)	Area	Area %
1	**9.608**	**11219758**	**100.000**
Totals		**11219758**	**100.000**

