

Supplementary Information

Microbial Cell Factories

Pregnenolone and progesterone production from natural sterols using recombinant strain of

***Mycolicibacterium smegmatis* mc² 155 expressing mammalian steroidogenesis system**

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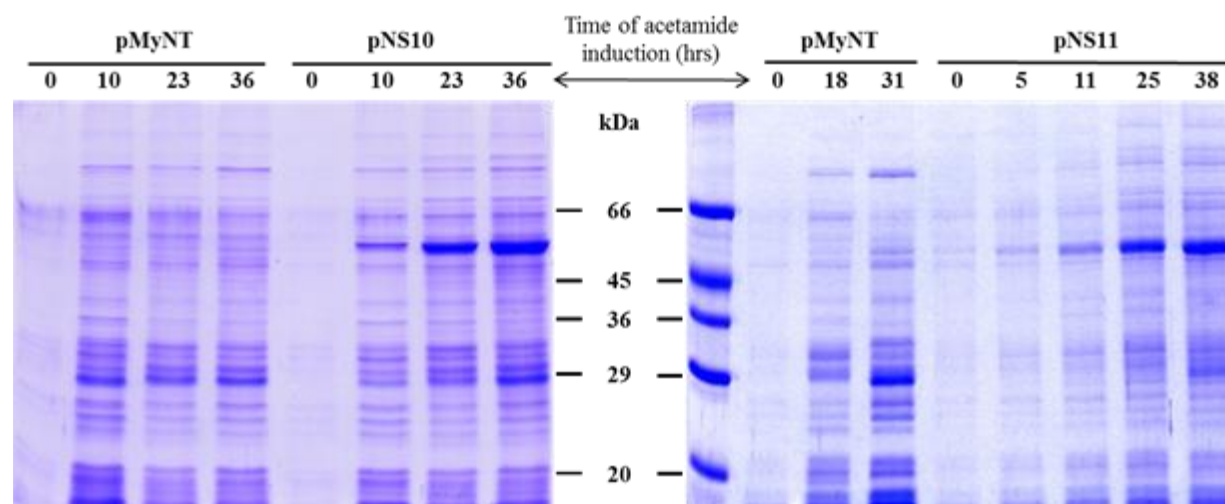


Fig. S1 SDS-PAGE analysis of proteins synthesized by acetamide induced *M. smegmatis* mc² 155 cells carrying recombinant plasmids

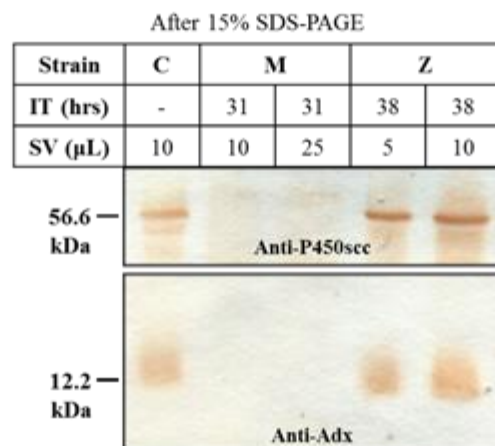
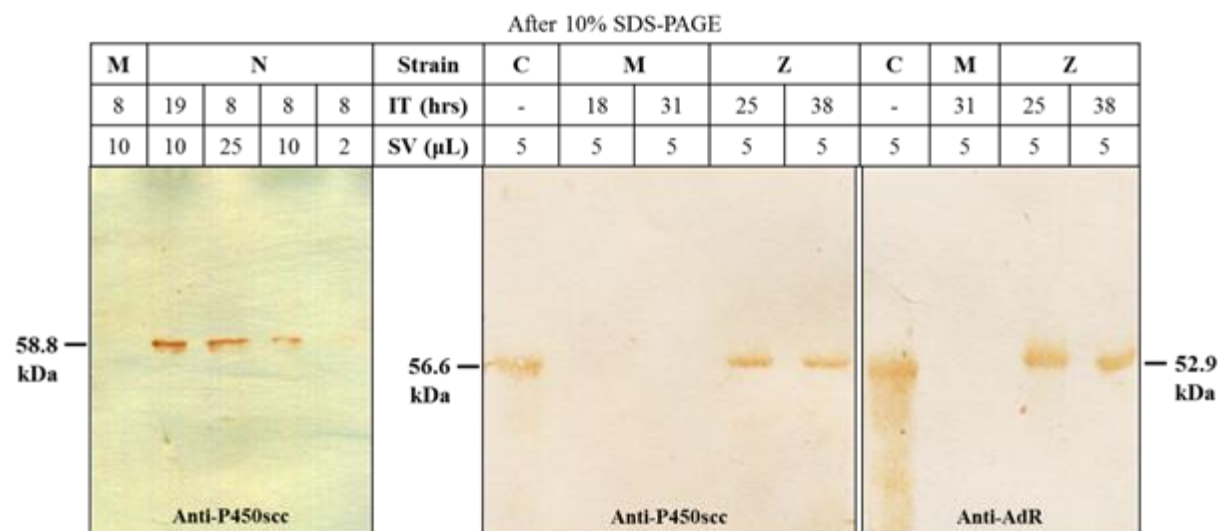


Fig. S2 Western immunoblotting of proteins synthesized by acetamide induced *M. smegmatis* mc² 155 cells carrying pMyNT (**M**) (negative control), pNS10 (**N**) and pNS11 (**Z**) plasmids. Antibodies against bovine P450scc, AdR or Adx were used. The protein preparation of IPTG-induced *E. coli* DH5ac/ pBar_Triple (Makeeva et al., 2013) was used as a positive control (**C**). The acetamide induction time (**IT**, hours) and volumes of samples applied to the gel (**SV**, μL) are presented in the figure

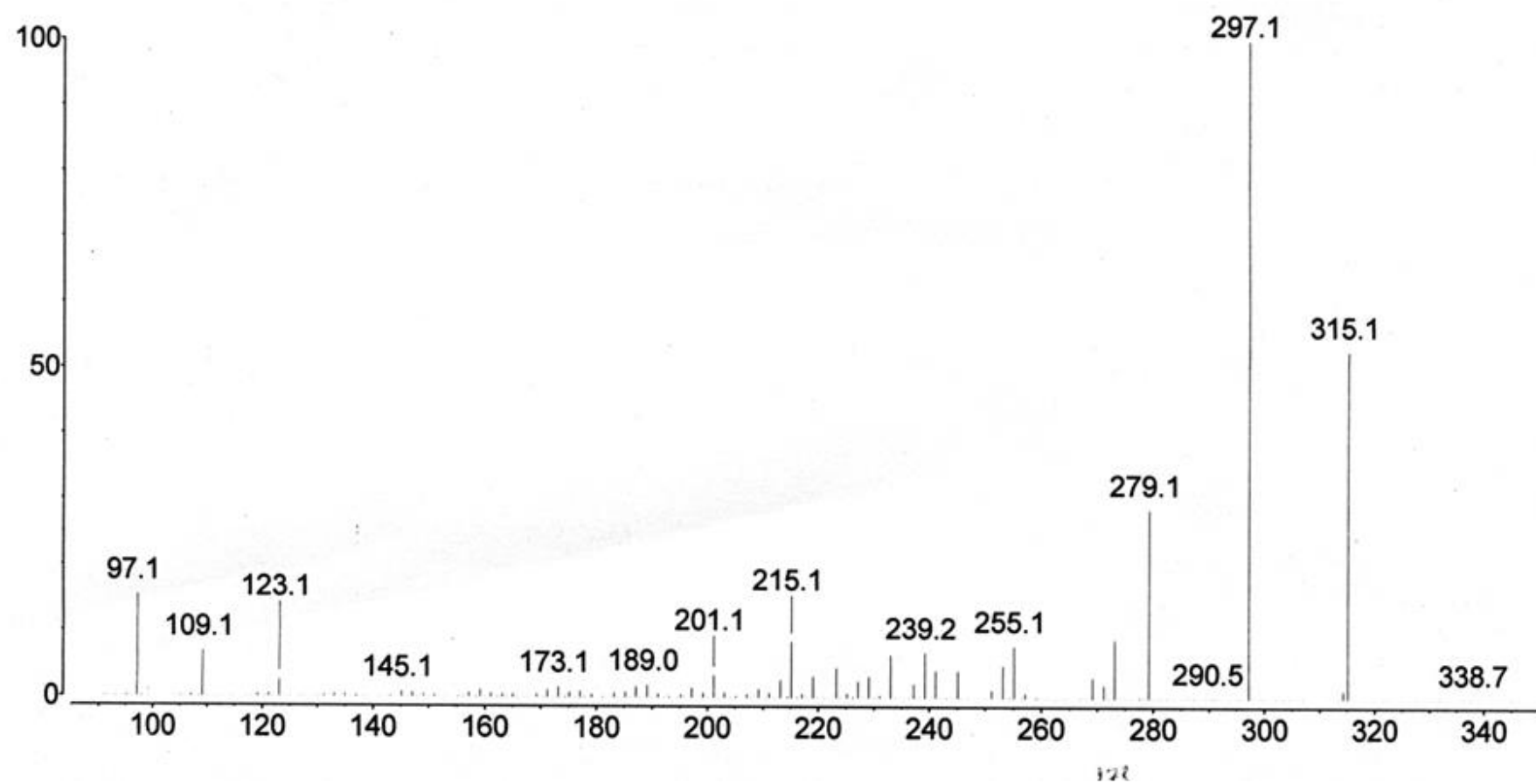


Fig. S3 Mass spectrum $[M+H]^+$ of progesterone (substrate-cholesterol)

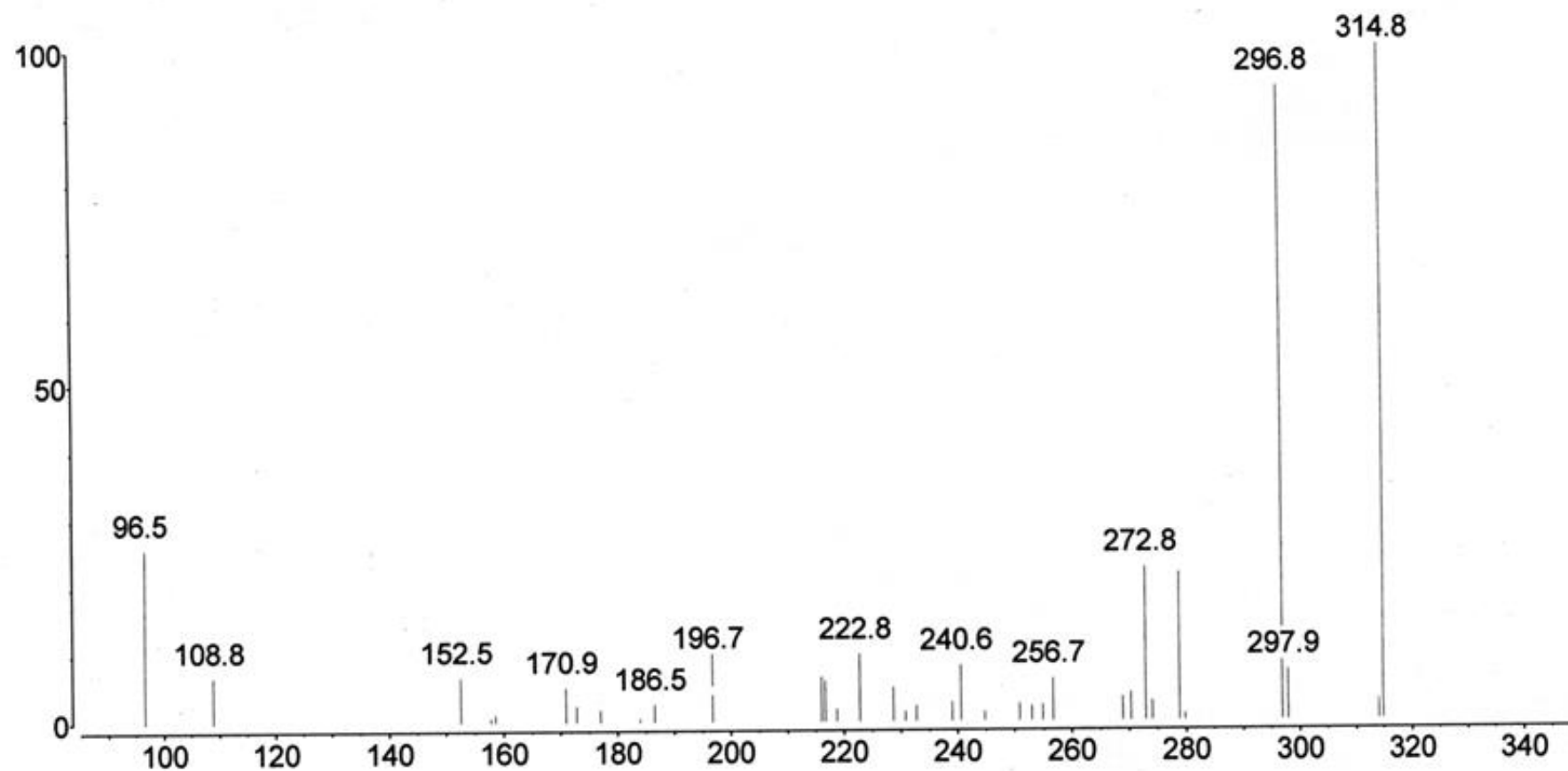


Fig. S4 Mass spectrum $[M+H]^+$ of progesterone (substrate-phytosterol)

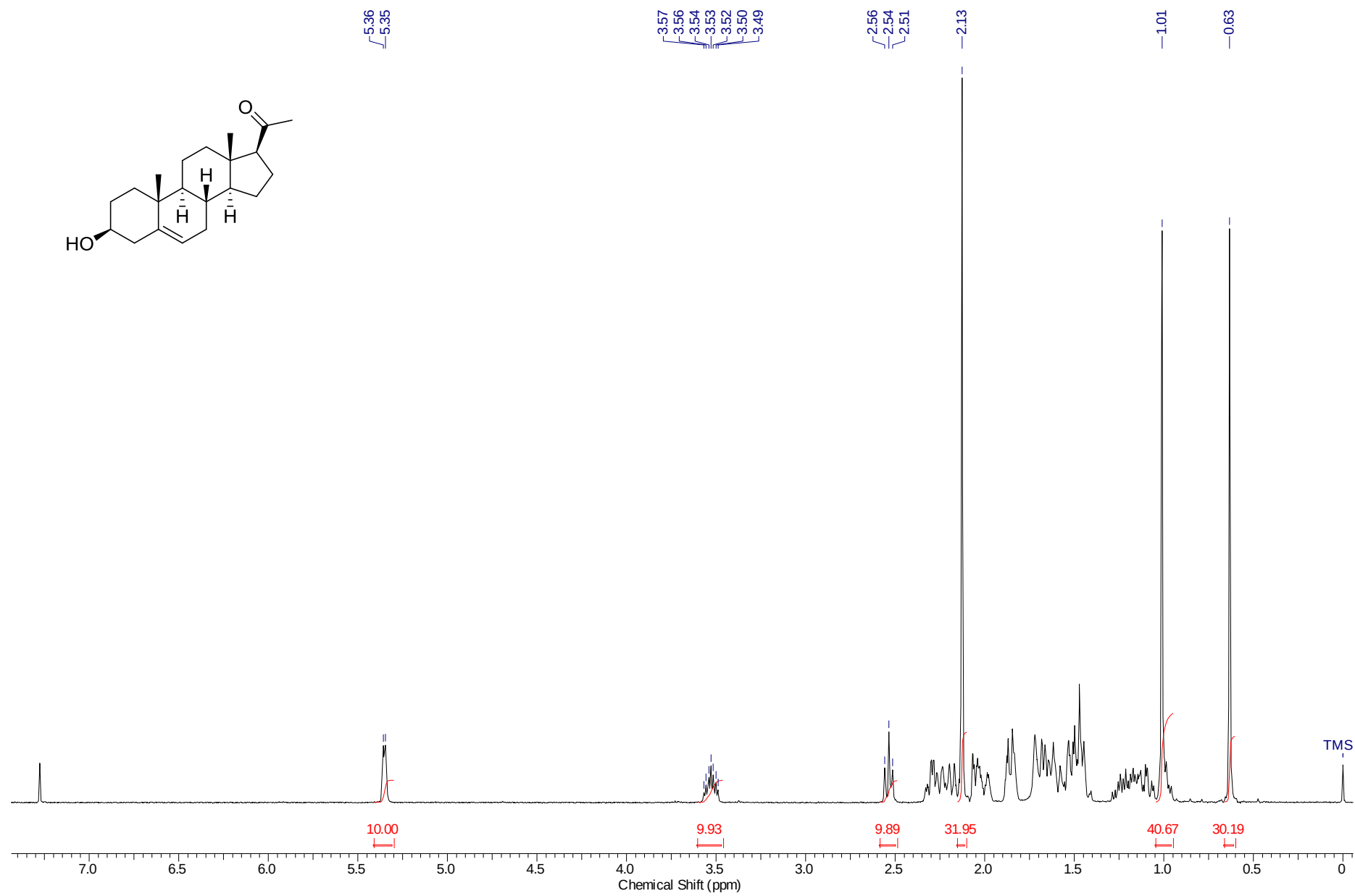


Fig. S5 ¹H -NMR spectrum of pregnenolone

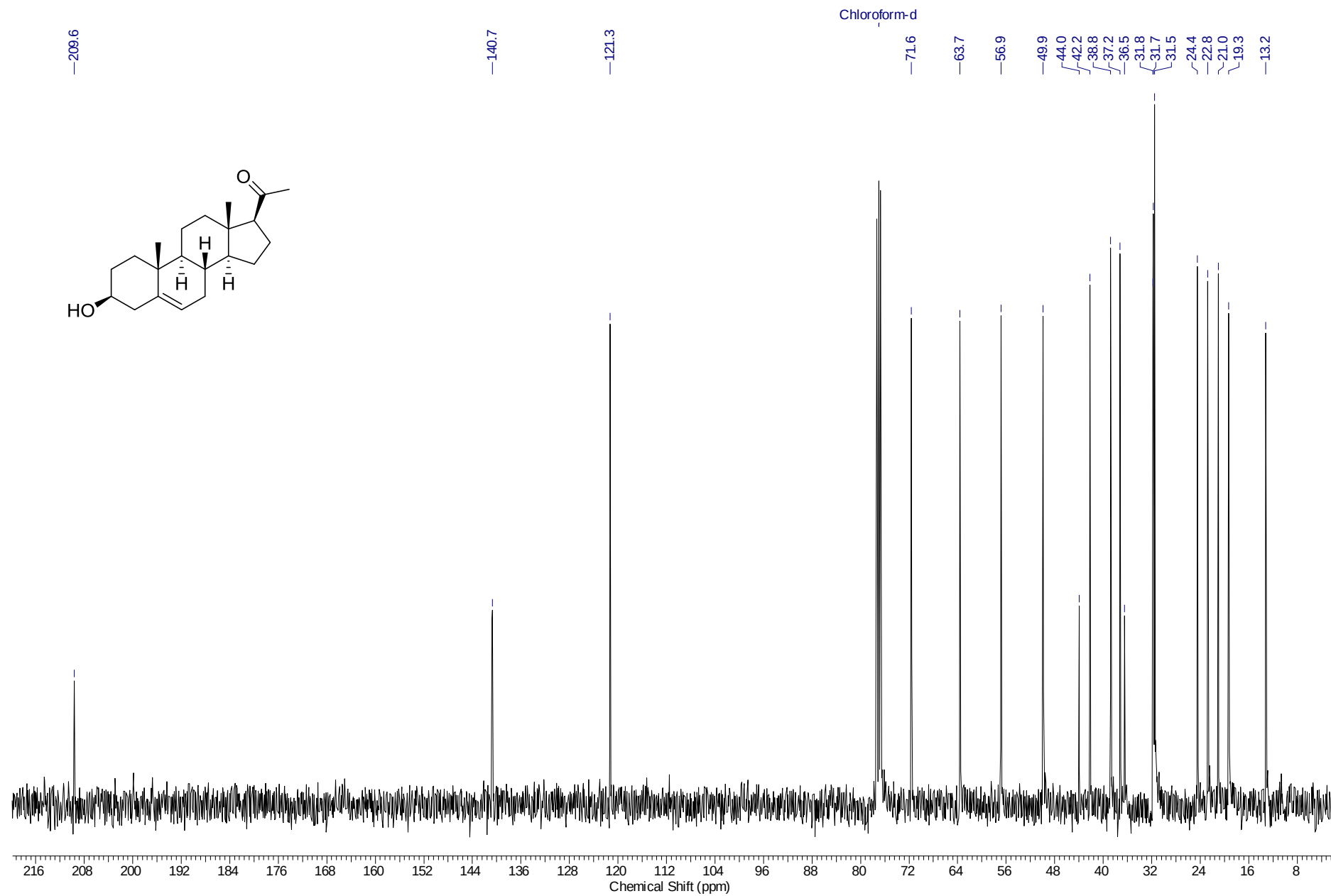


Fig. S6 ¹³C-NMR spectrum of pregnenolone

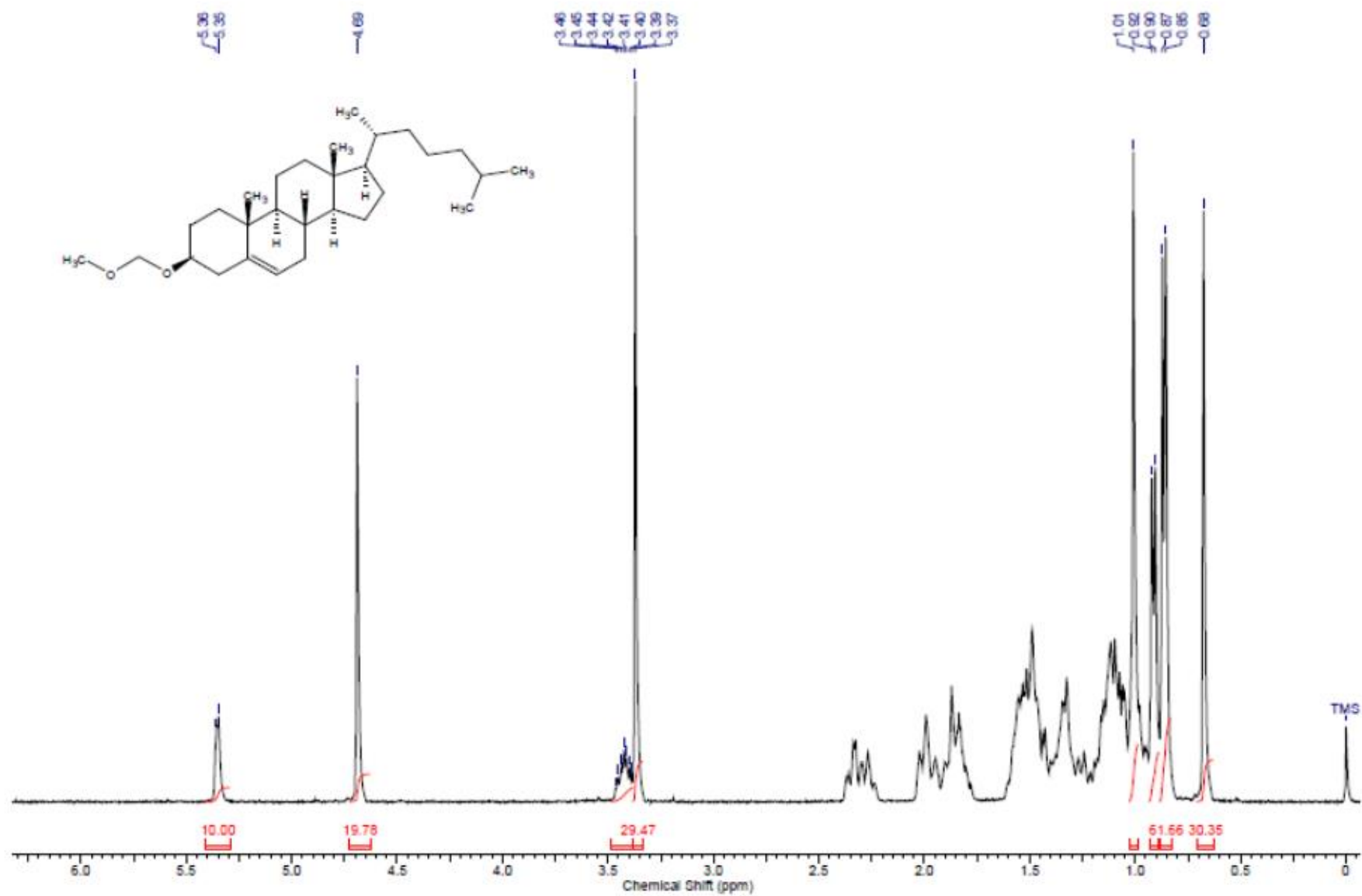


Fig. S7 ^1H -NMR spectrum of MOM-cholesterol

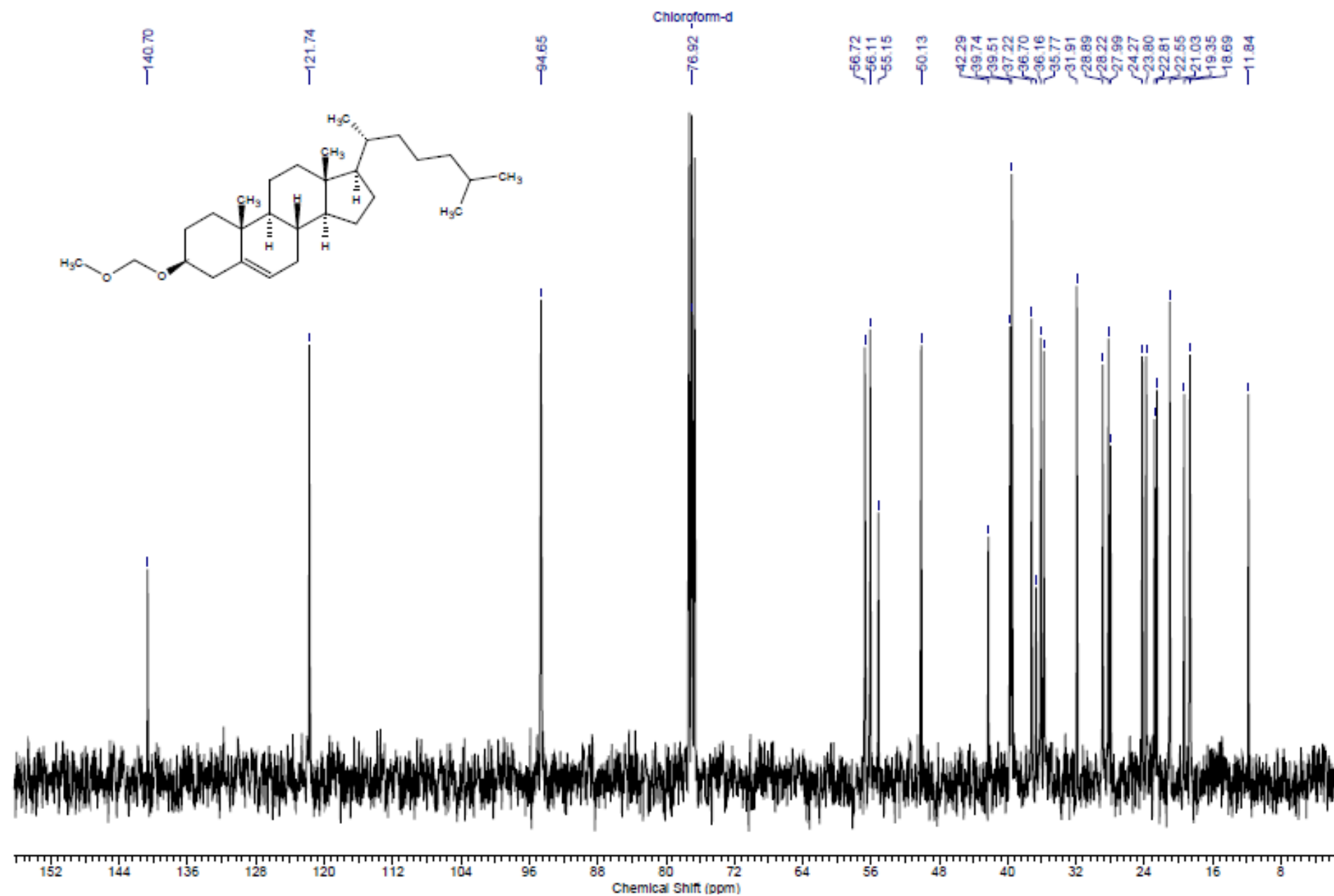


Fig. S8 ^{13}C -NMR spectrum of MOM-cholesterol

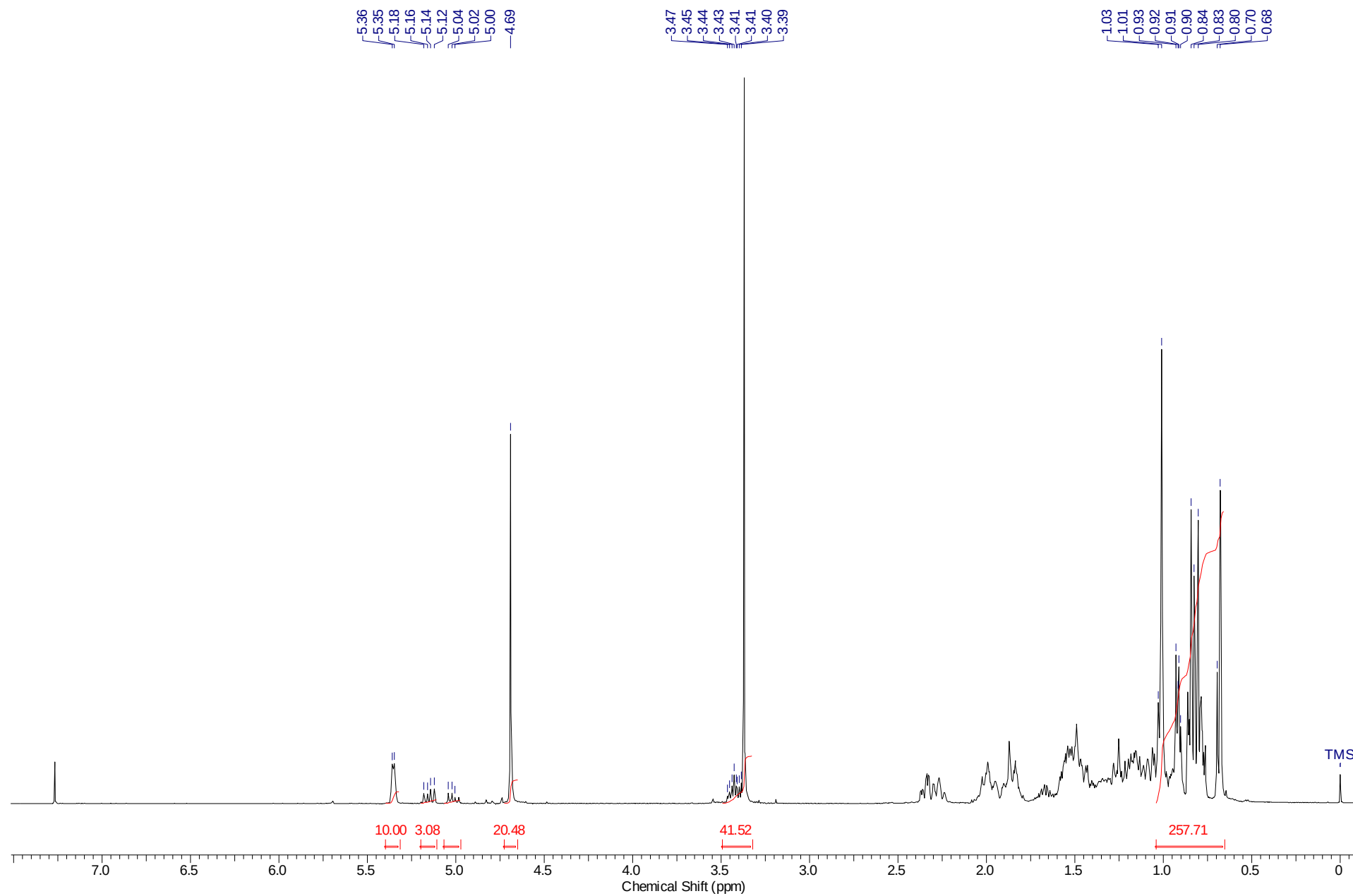


Fig. S9 ^1H -NMR spectrum of MOM-phytosterol

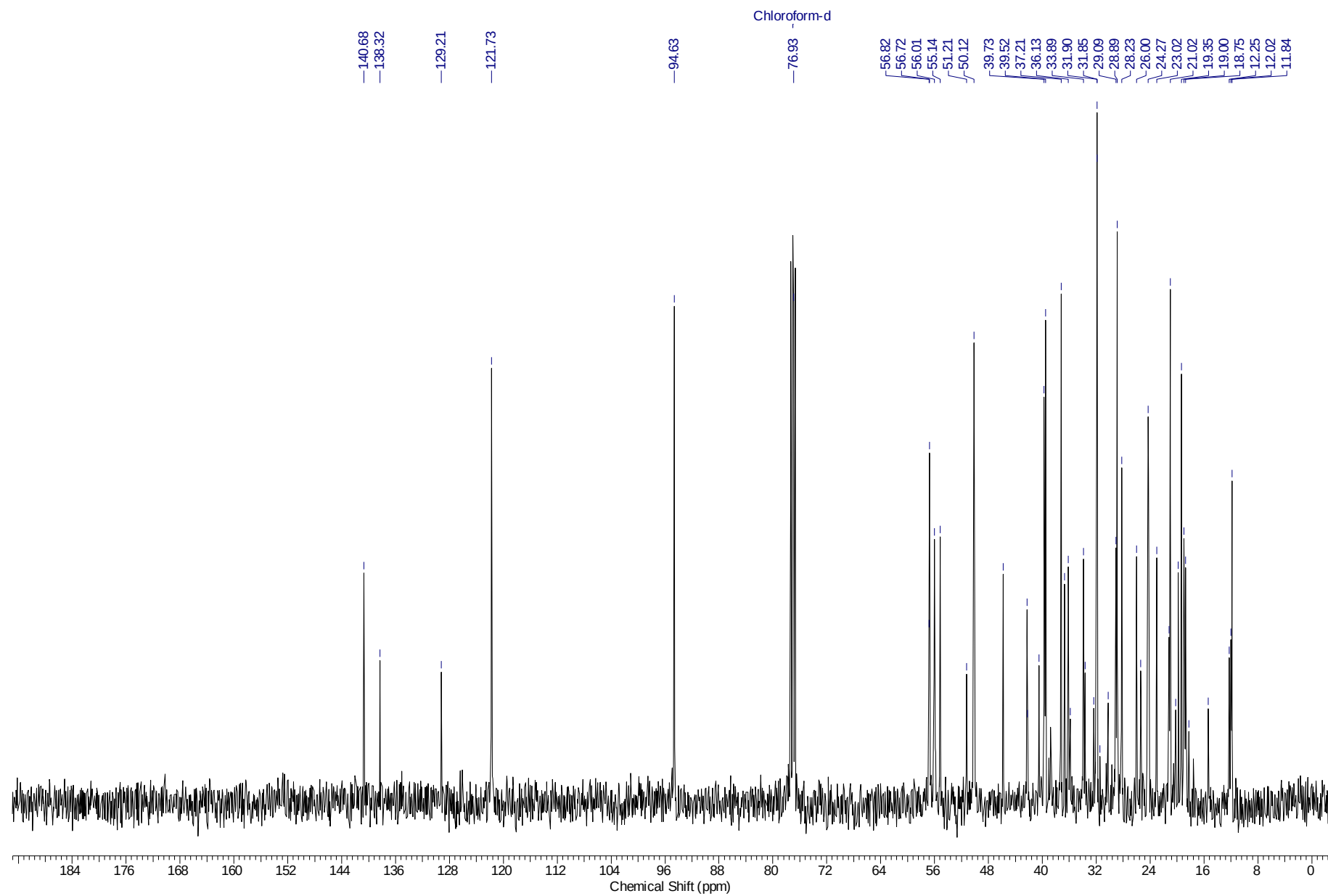


Fig. S10 ¹³C-NMR spectrum of MOM-phytosterol

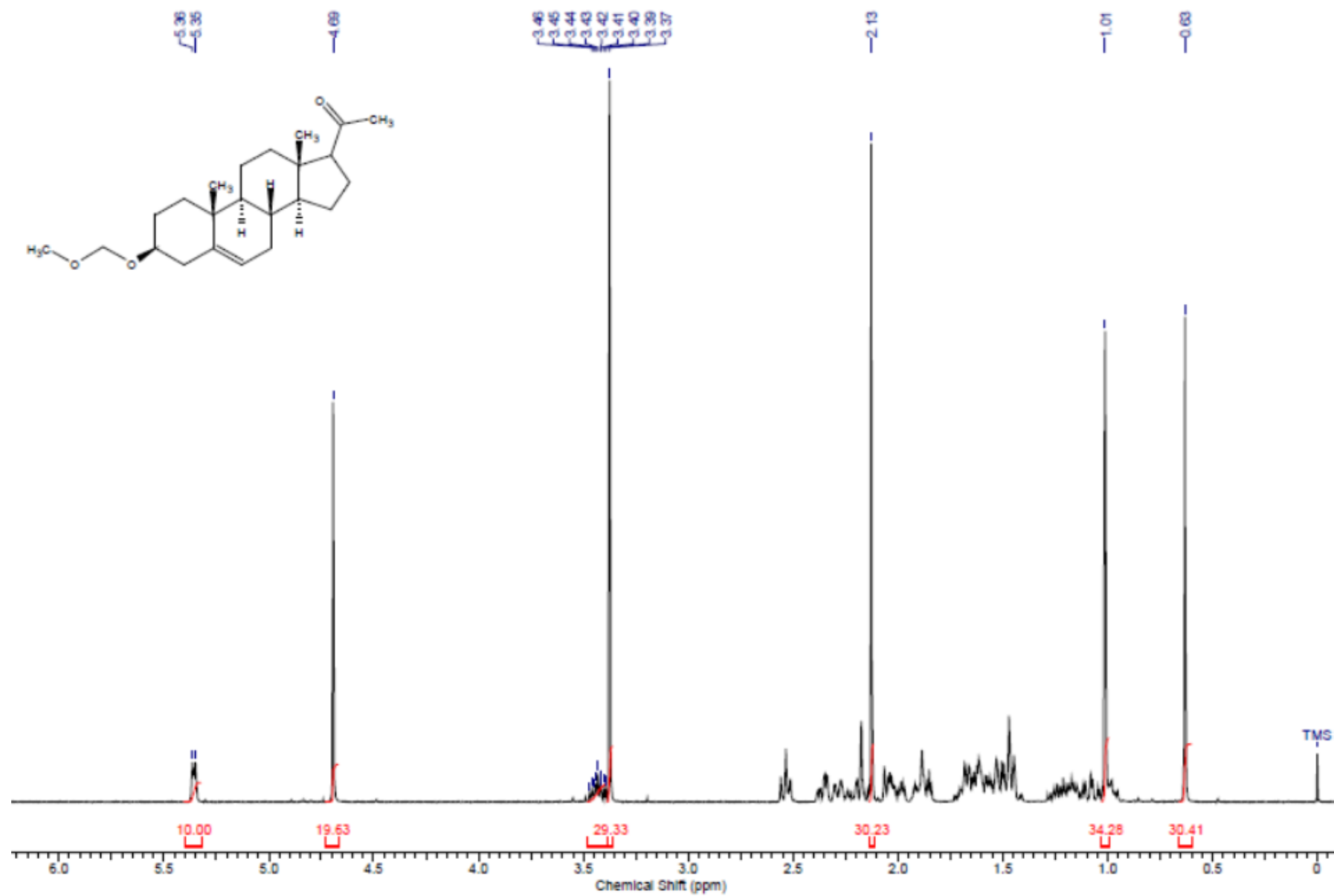


Fig. S11 ^1H -NMR spectrum of MOM-pregnenolone

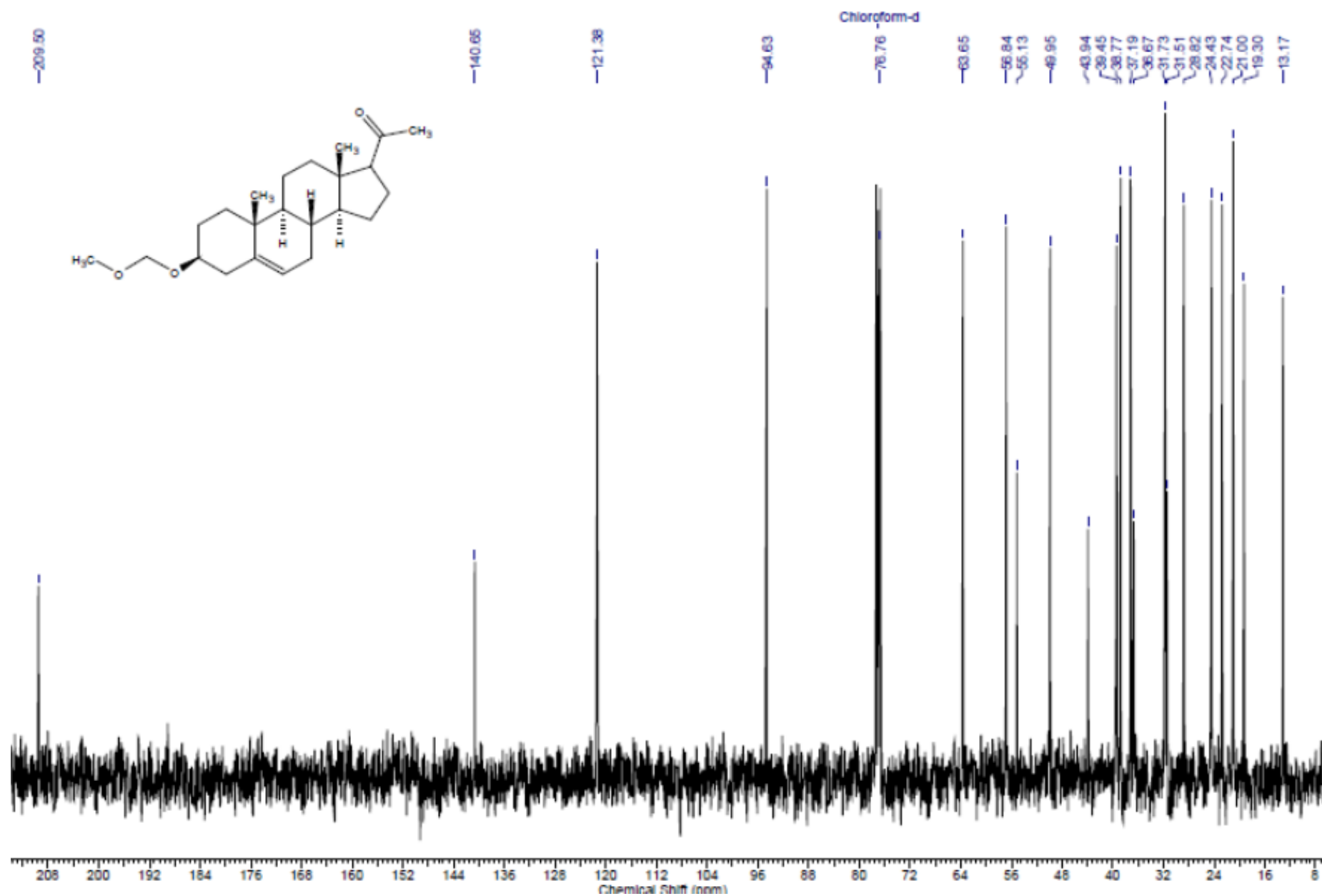


Fig. S12 ^{13}C -NMR spectrum of MOM-pregnenolone

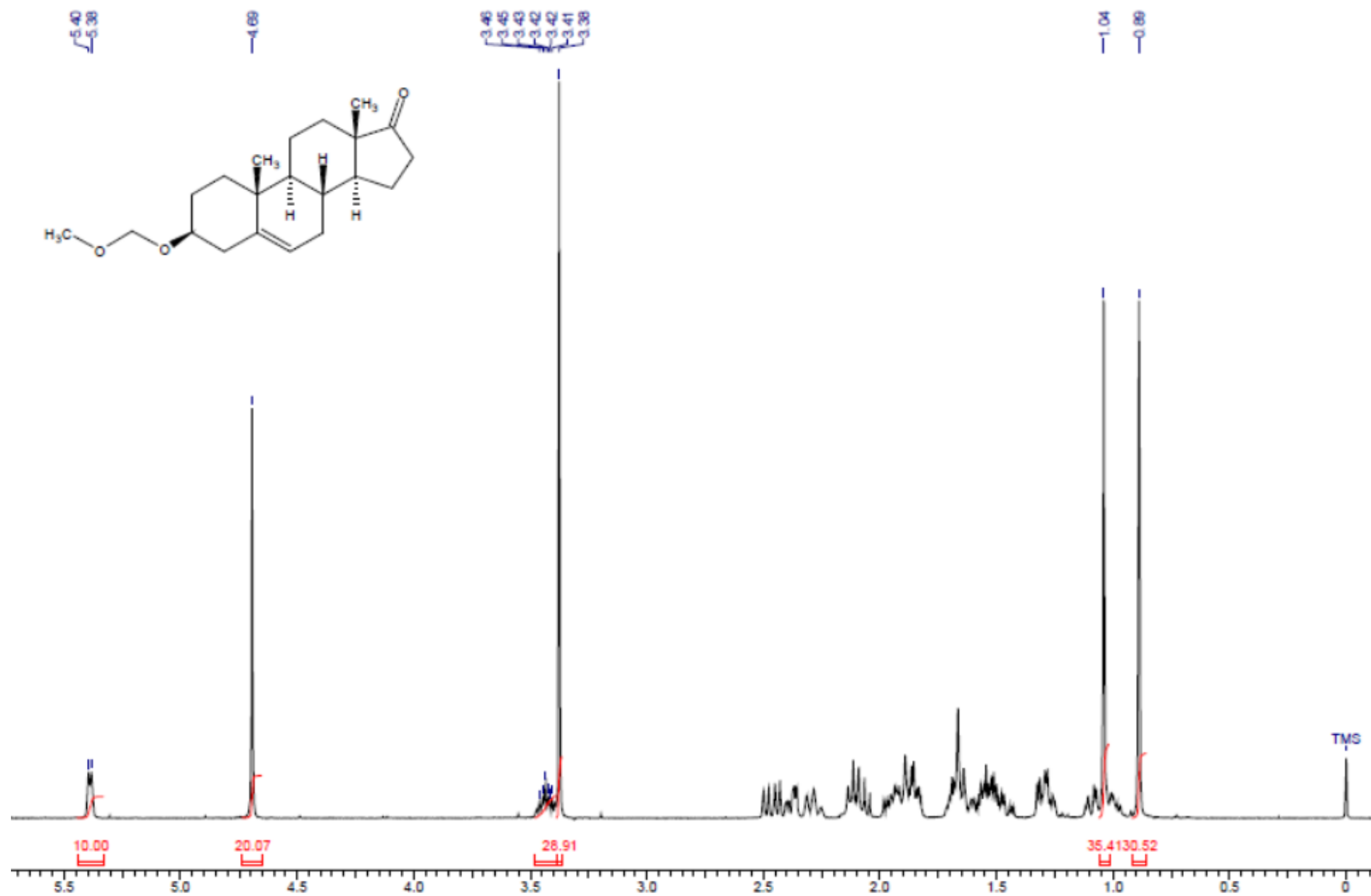


Fig. S13 ¹H -NMR spectrum of MOM-DHEA

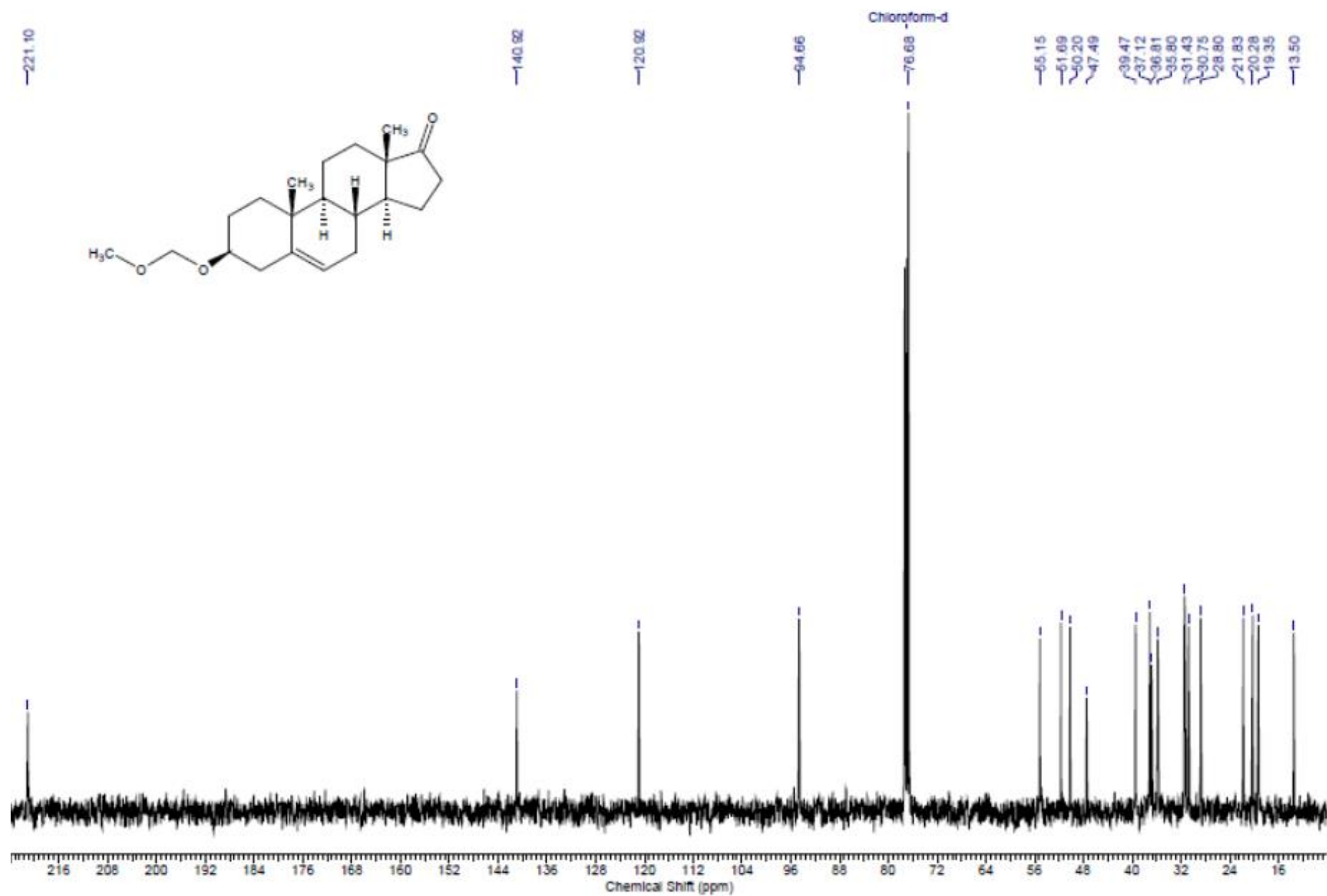


Fig. S14 ^{13}C -NMR spectrum of MOM-DHEA