

SUPPLEMENTARY DATA

Role of the thiosugar ring in the inhibitory activity of salacinol, a potent natural α -glucosidase inhibitor

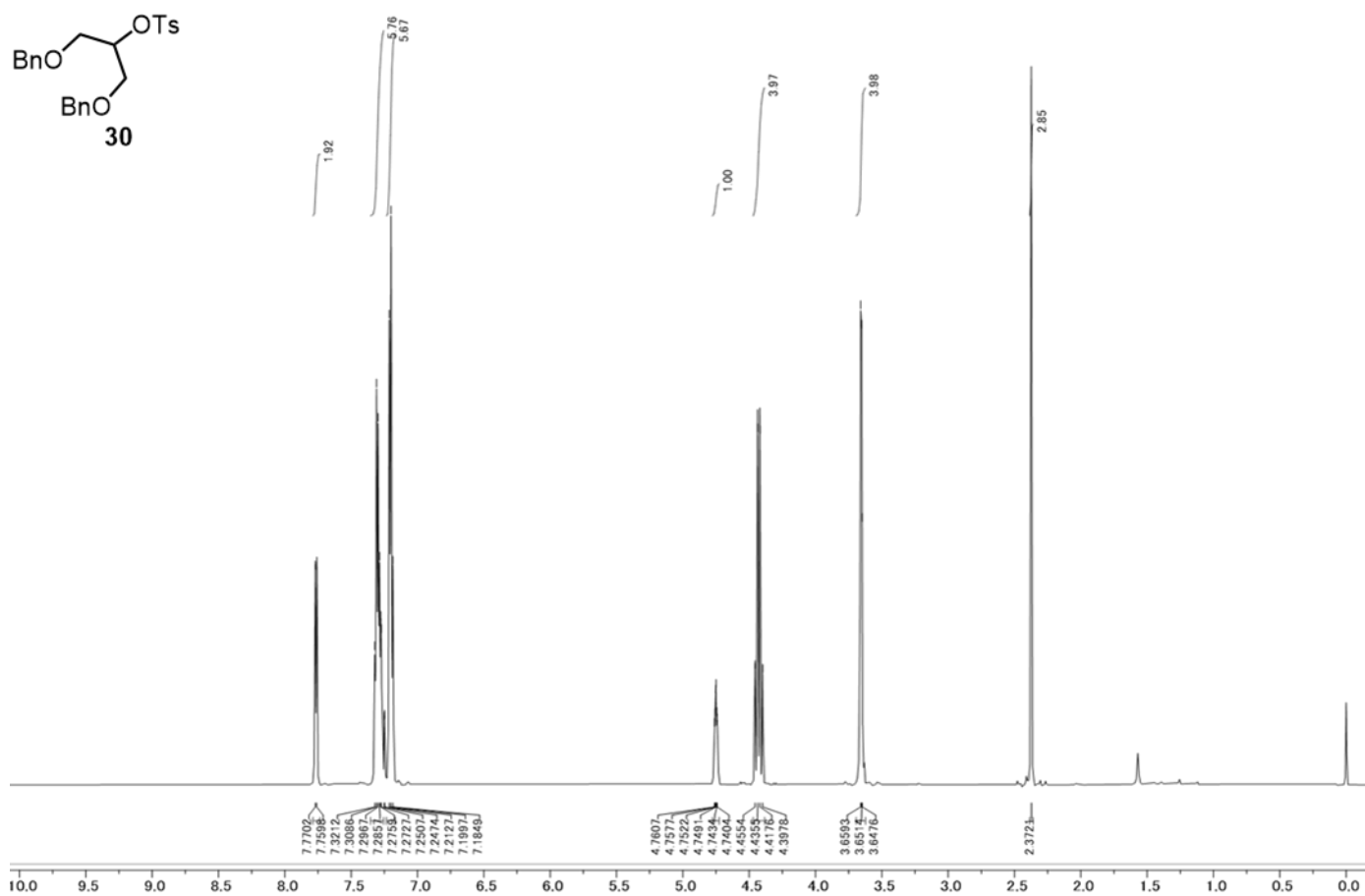
Katsuki Takashima,^a Shinya Nakamura,^a Fumihiro Ishikawa,^a Maiko Nagayama,^a
Shinsuke Marumoto,^c Weijia Xie,^d Isao Nakanishi,^a Osamu Muraoka,^b
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Japan*

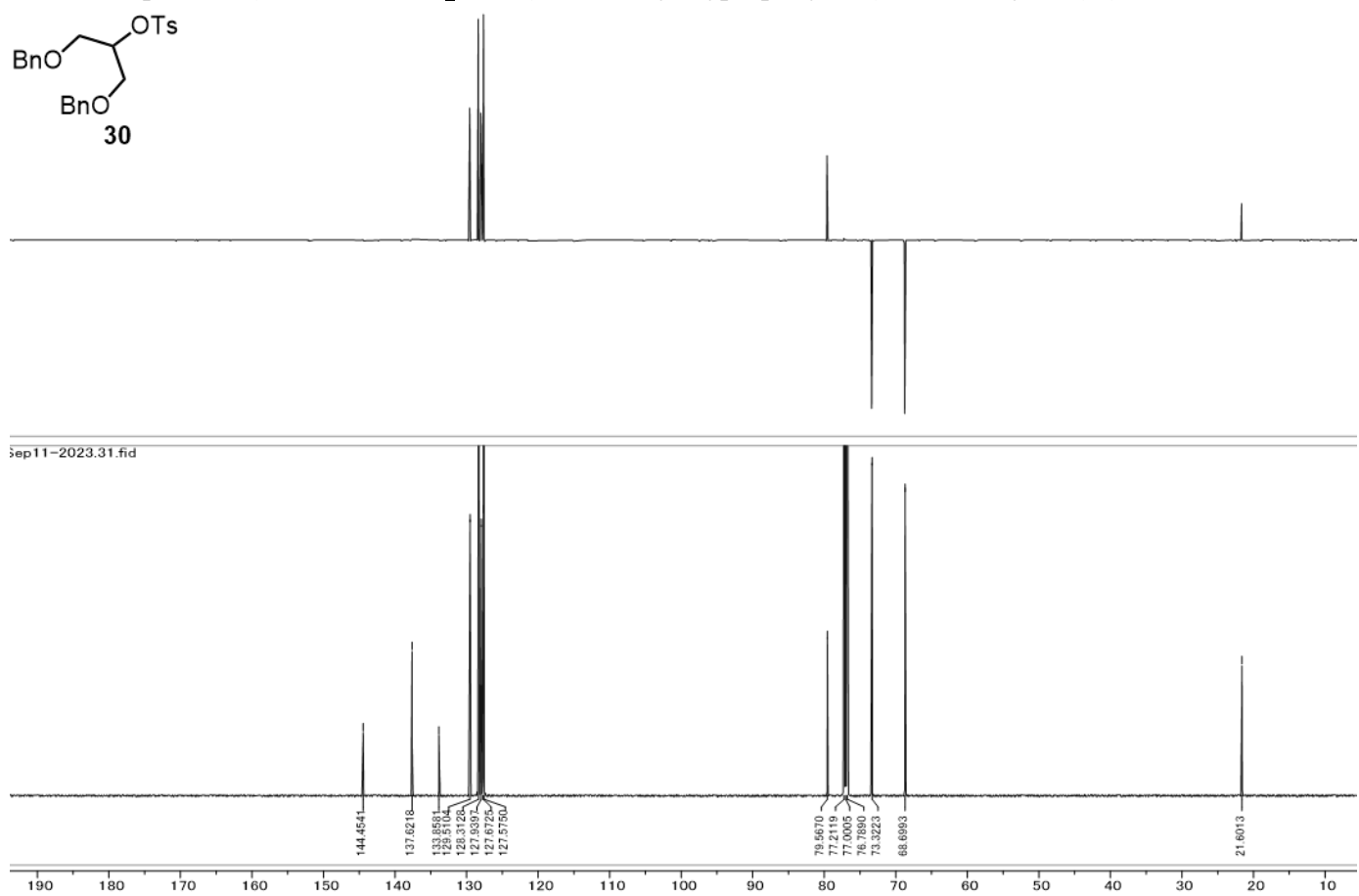
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Pharmaceutical University, Nanjing 2100009, P. R. China*

¹H and ¹³C NMR spectroscopic data of synthetic compounds

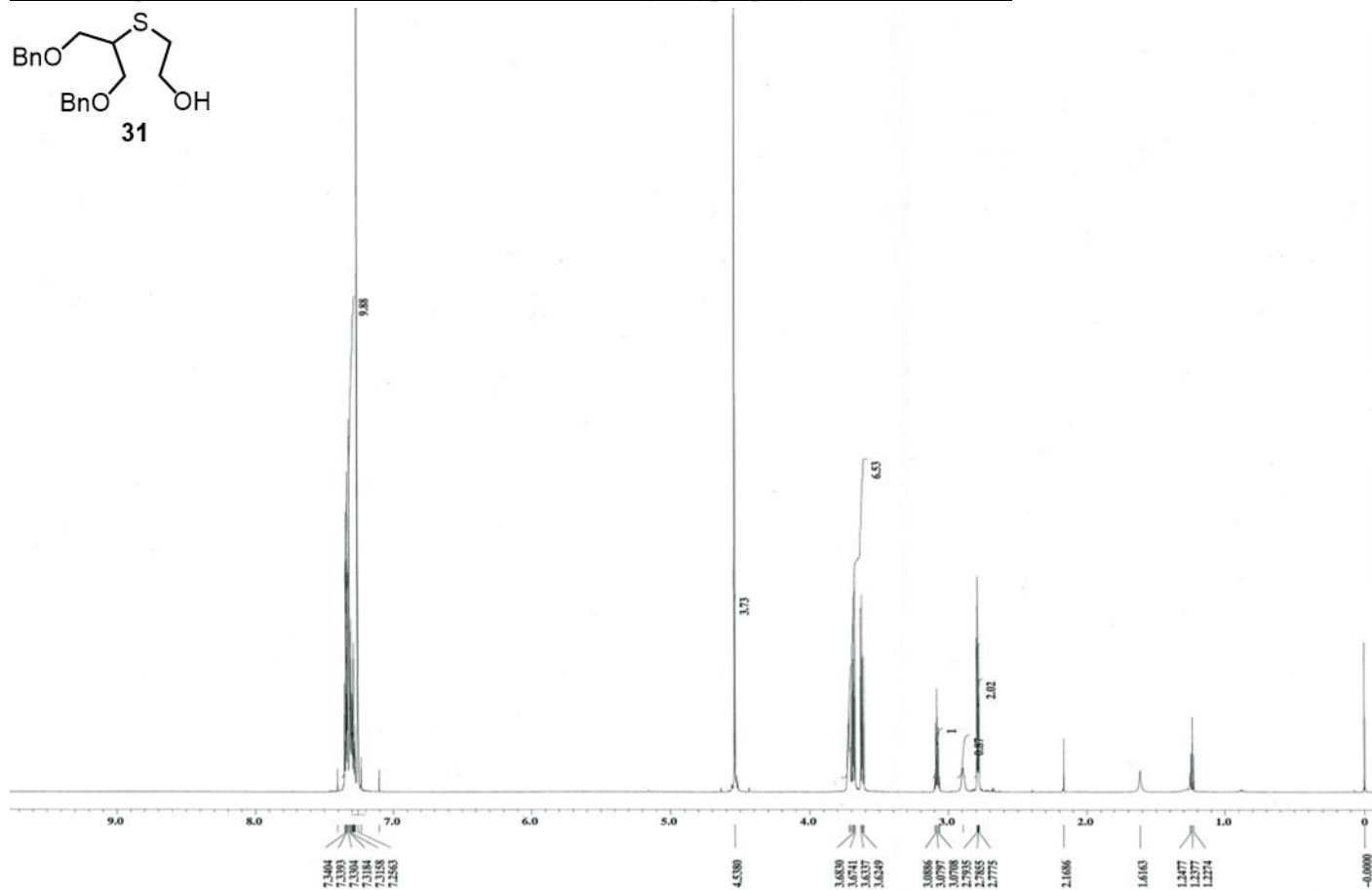
¹H NMR spectrum (600 MHz, CDCl₃) of 2-(1,3-Dibenzylxyprop-2-ylthio)ethanol tosylate (30)



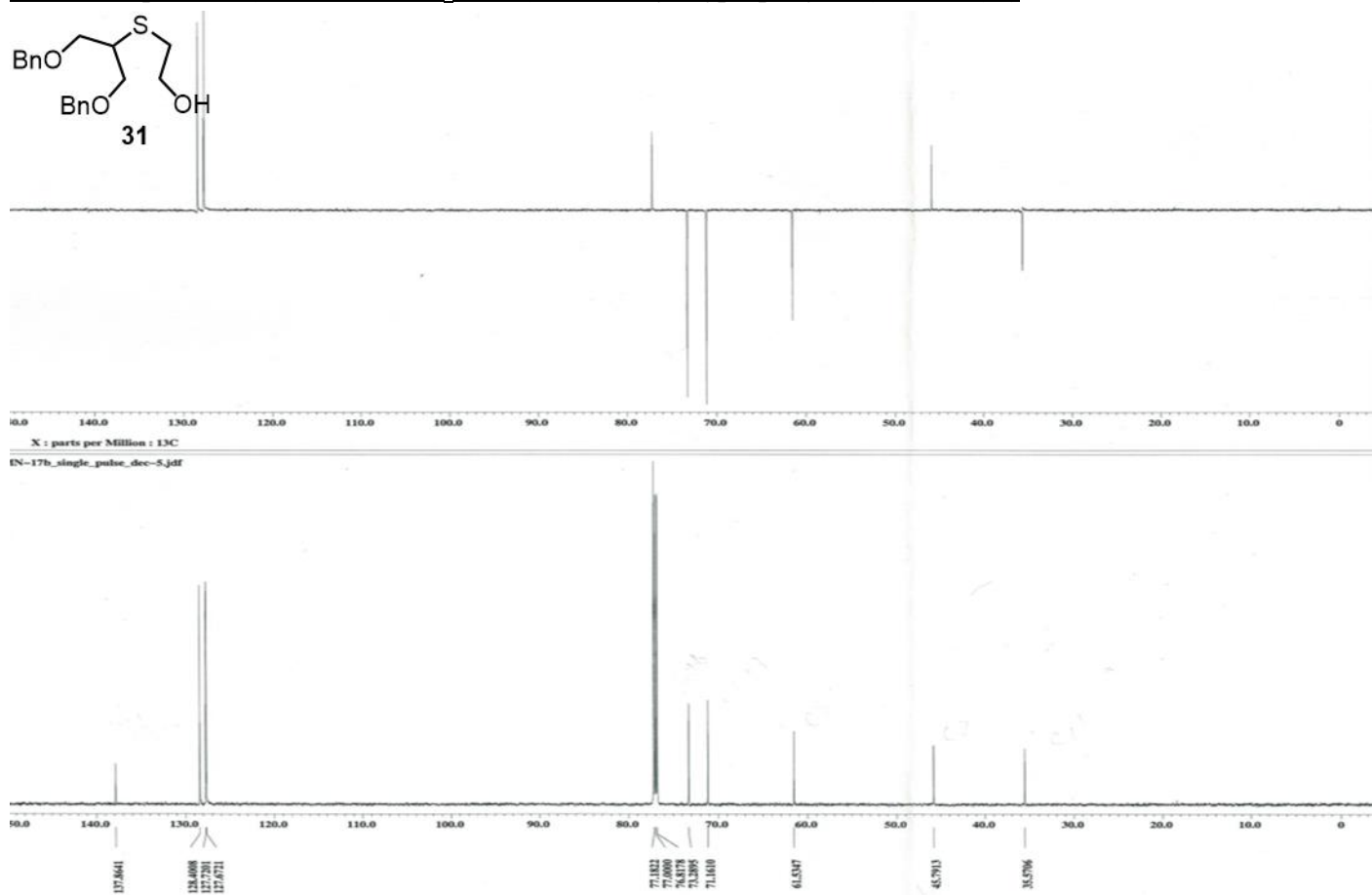
¹³C NMR spectrum (150 MHz, CDCl₃) of 2-(1,3-Dibenzylxyprop-2-ylthio)ethanol tosylate (30)



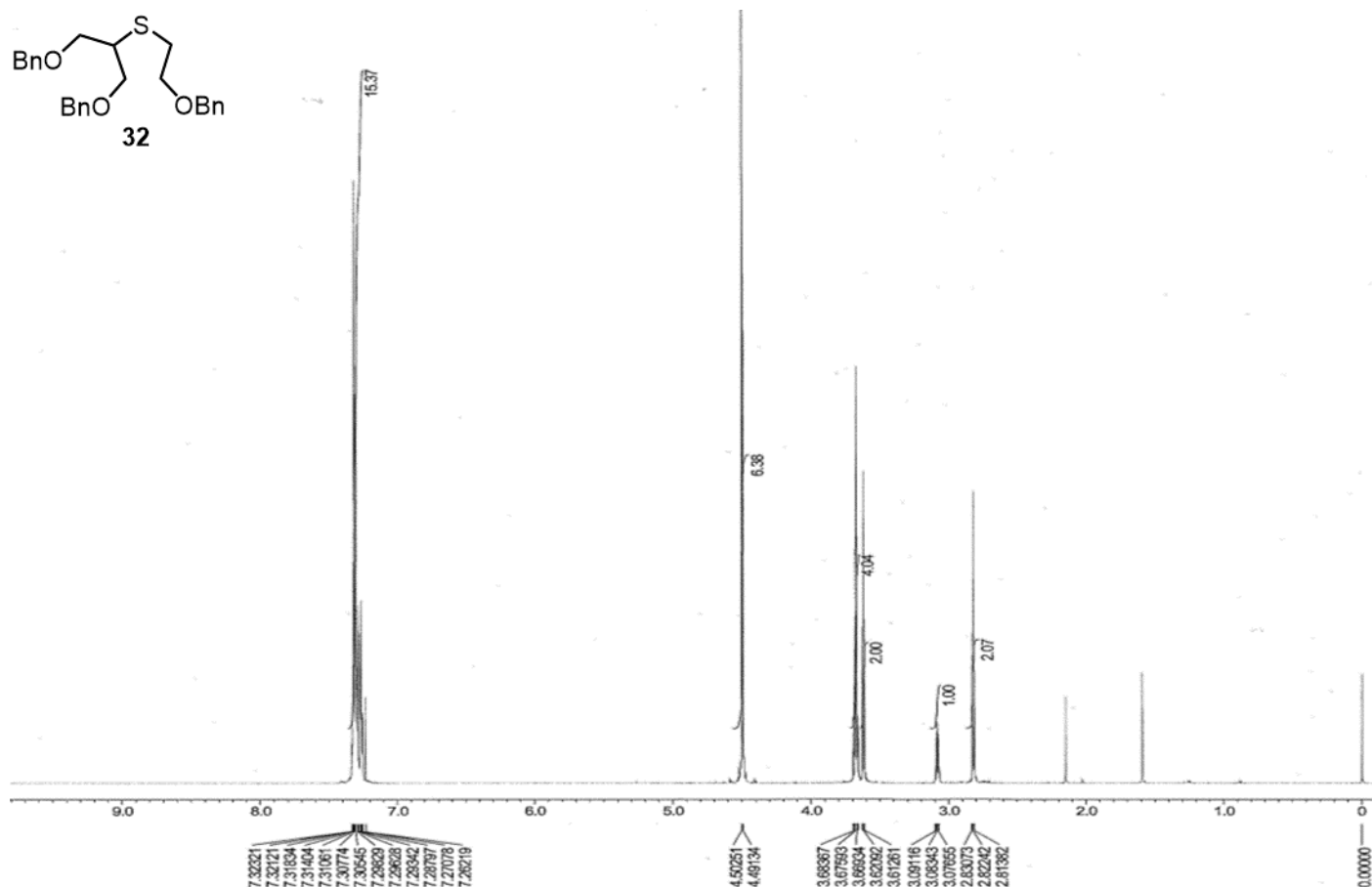
¹H NMR spectrum (500 MHz, CDCl₃) of 2-(1,3-Dibenzyloxyprop-2-ylthio)ethanol (31)



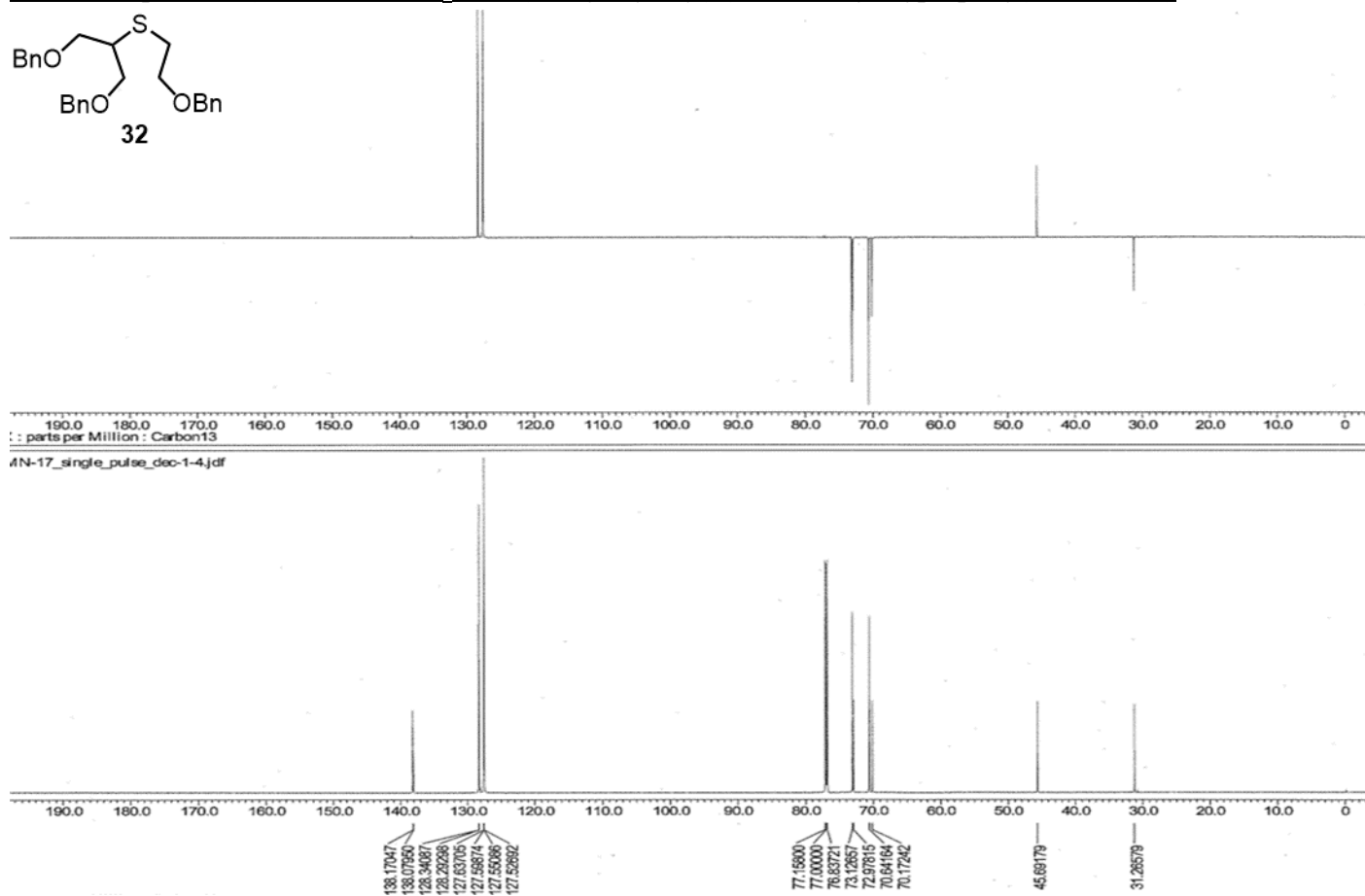
¹³C NMR spectrum (125 MHz, CDCl₃) of 2-(1,3-Dibenzyloxyprop-2-ylthio)ethanol (31)



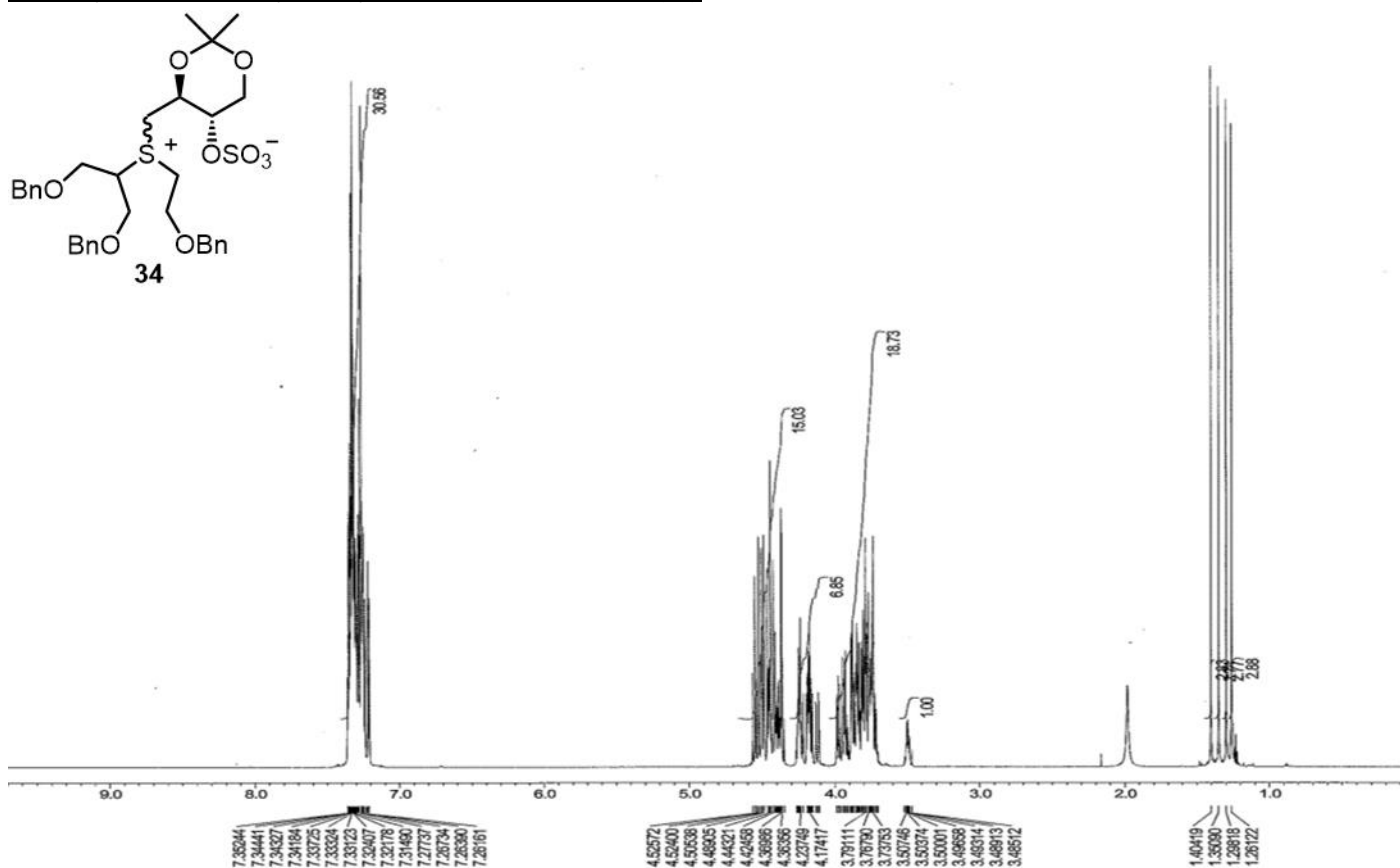
¹H NMR spectrum (800 MHz, CDCl₃) of 2-(Benzyloxyethyl) (1,3-Dibenzyloxyprop-2-yl) Sulfide (32)



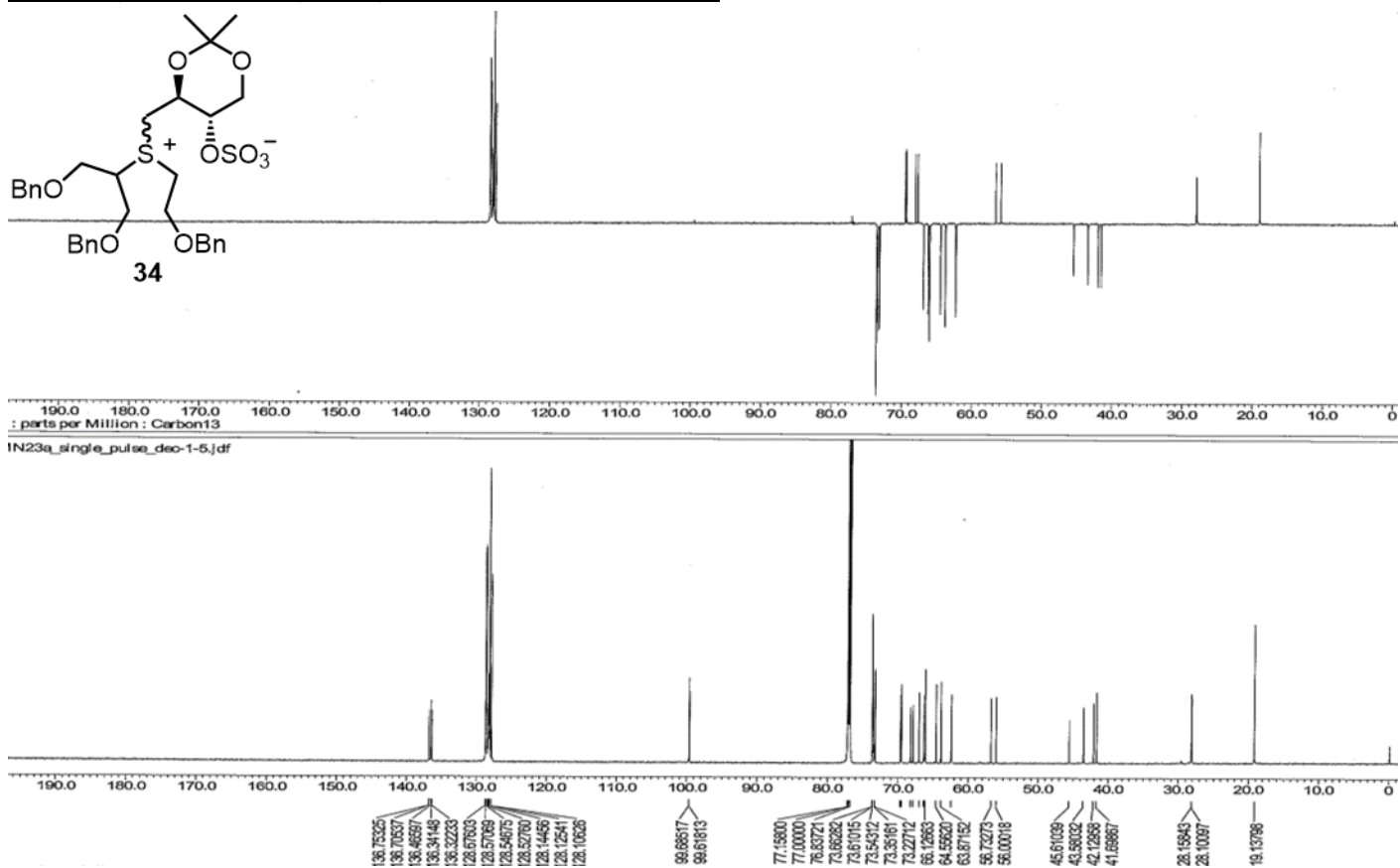
¹³C NMR spectrum (200 MHz, CDCl₃) of 2-(Benzyloxyethyl) (1,3-Dibenzyloxyprop-2-yl) Sulfide (32)



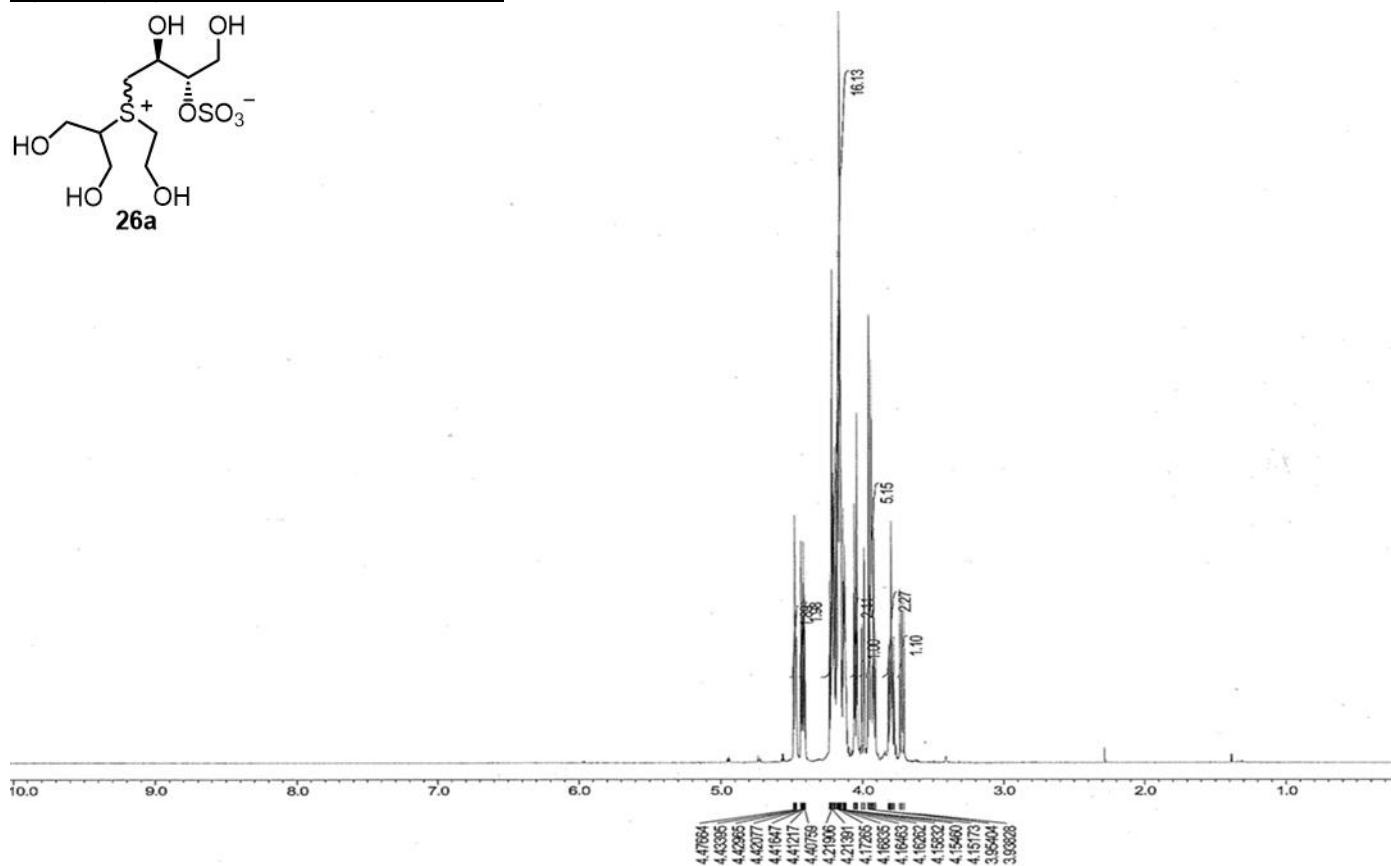
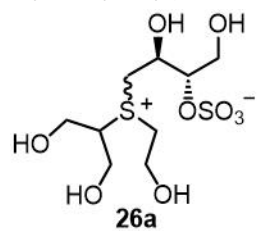
¹H NMR spectrum (800 MHz, CDCl₃) of (2-Benzyloxyethyl) [1,3-Di(benzyloxy)propan-2-yl] [(4*S*,5*S*)-2,2-Dimethyl-5-sulfoxy-1,3-dioxan-4-ylmethyl] Sulfonium Inner Salt (34)



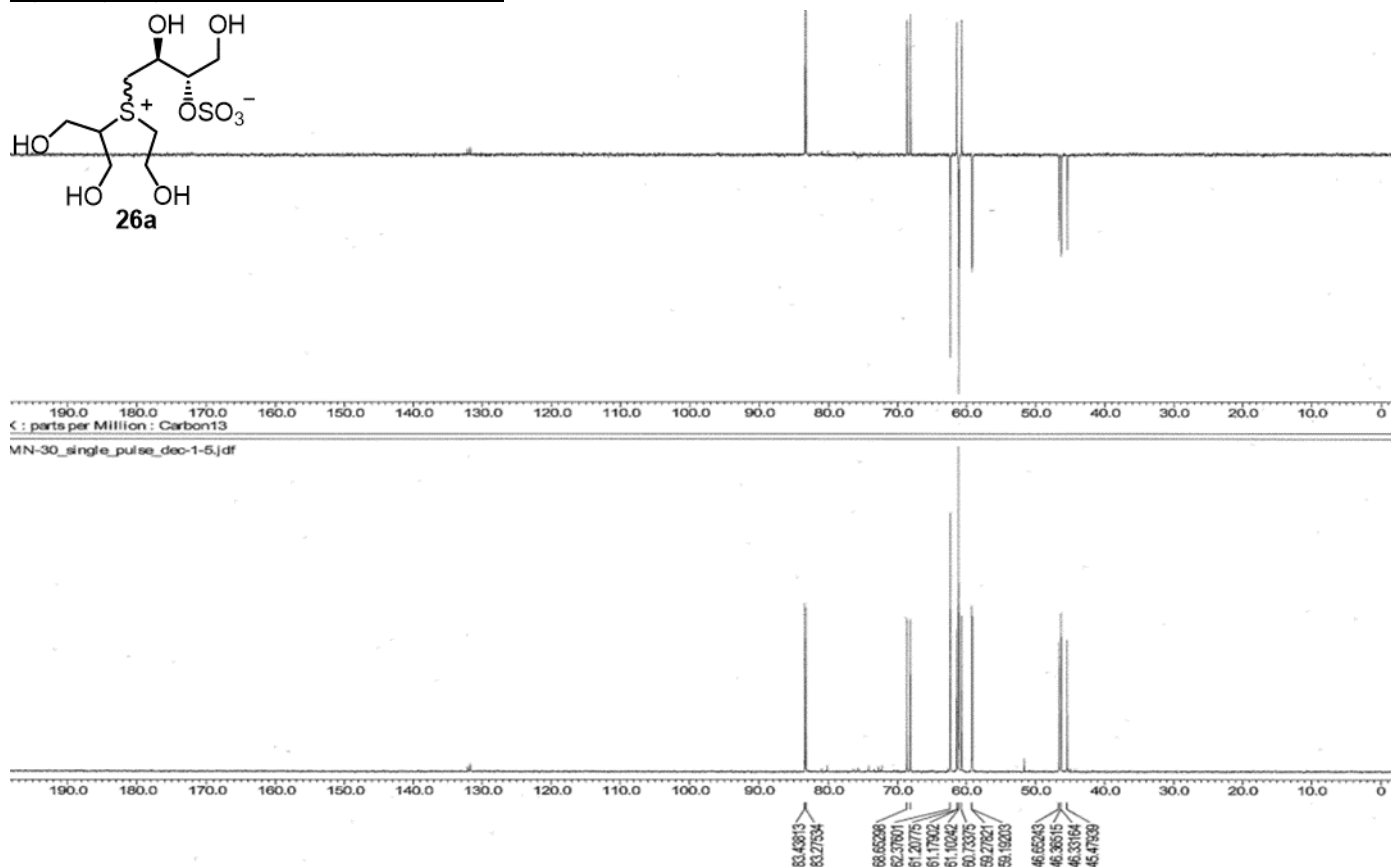
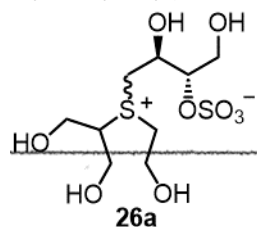
¹³C NMR spectrum (200 MHz, CDCl₃) of (2-Benzyloxyethyl) [1,3-Di(benzyloxy)propan-2-yl] [(4*S*,5*S*)-2,2-Dimethyl-5-sulfoxy-1,3-dioxan-4-ylmethyl] Sulfonium Inner Salt (34)



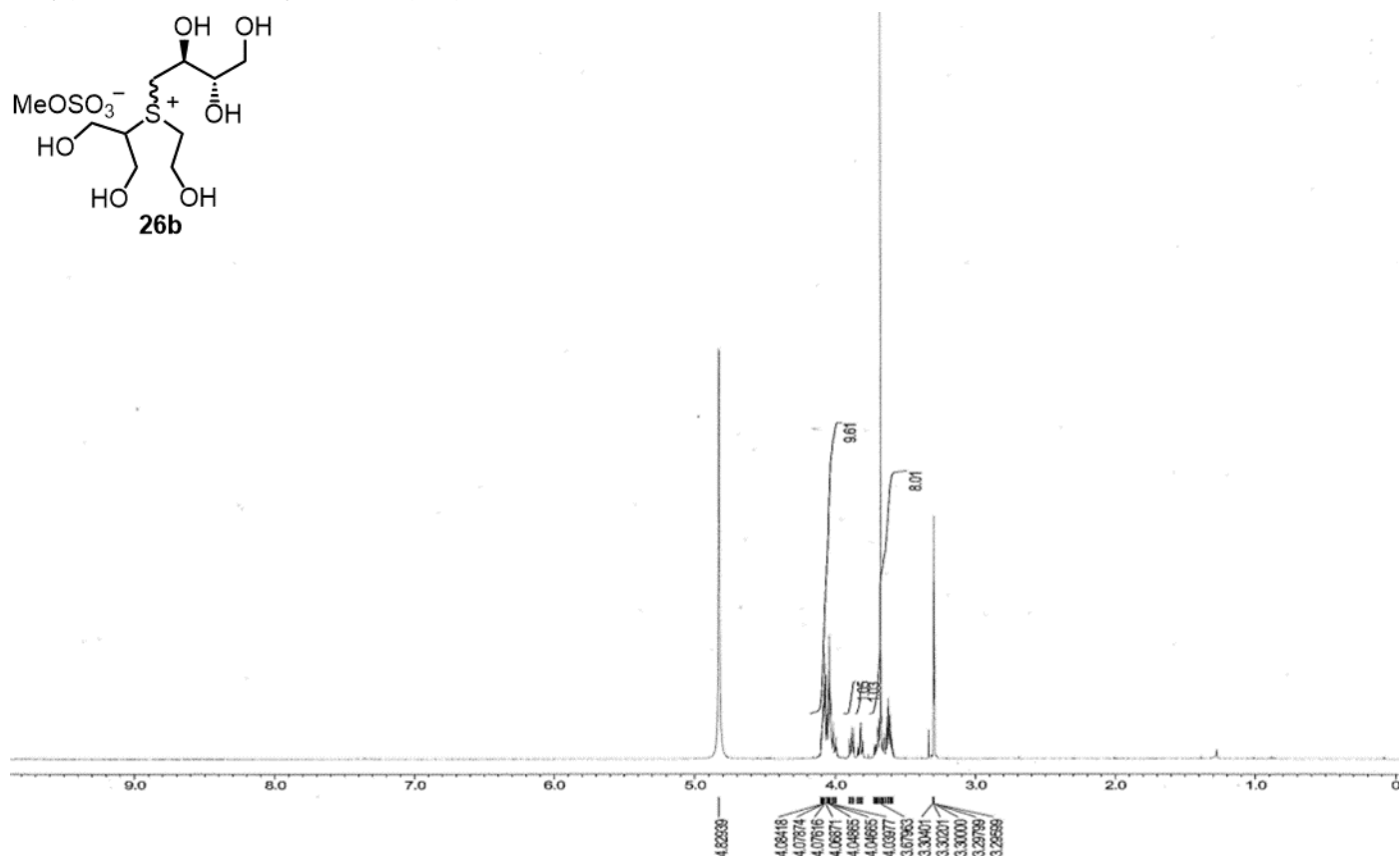
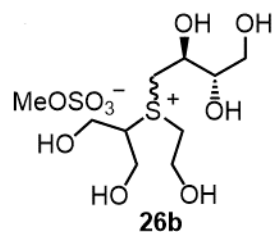
¹H NMR spectrum (800 MHz, D₂O) of (1,3-Dihydroxypropan-2-yl) [(2*S*,3*S*)-2,4-Dihydroxy-3-sulfoo xybutyl] (2-Hydroxyethyl) Sulfonium Inner Salt(26a)



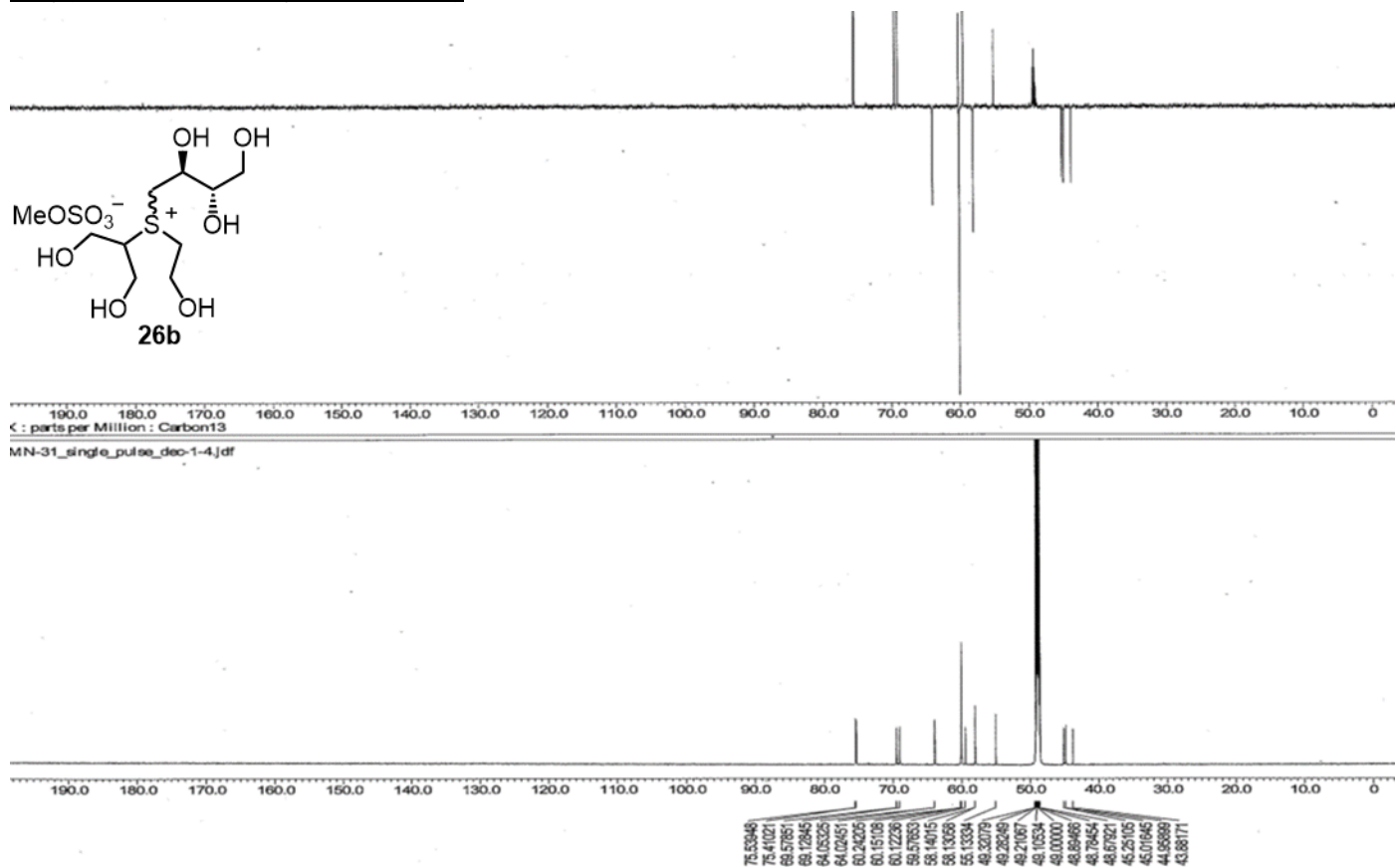
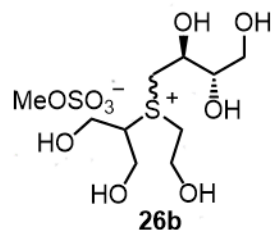
¹³C NMR spectrum (200 MHz, D₂O) of (1,3-Dihydroxypropan-2-yl) [(2*S*,3*S*)-2,4-Dihydroxy-3-sulfoo xybutyl] (2-Hydroxyethyl) Sulfonium Inner Salt(26a)



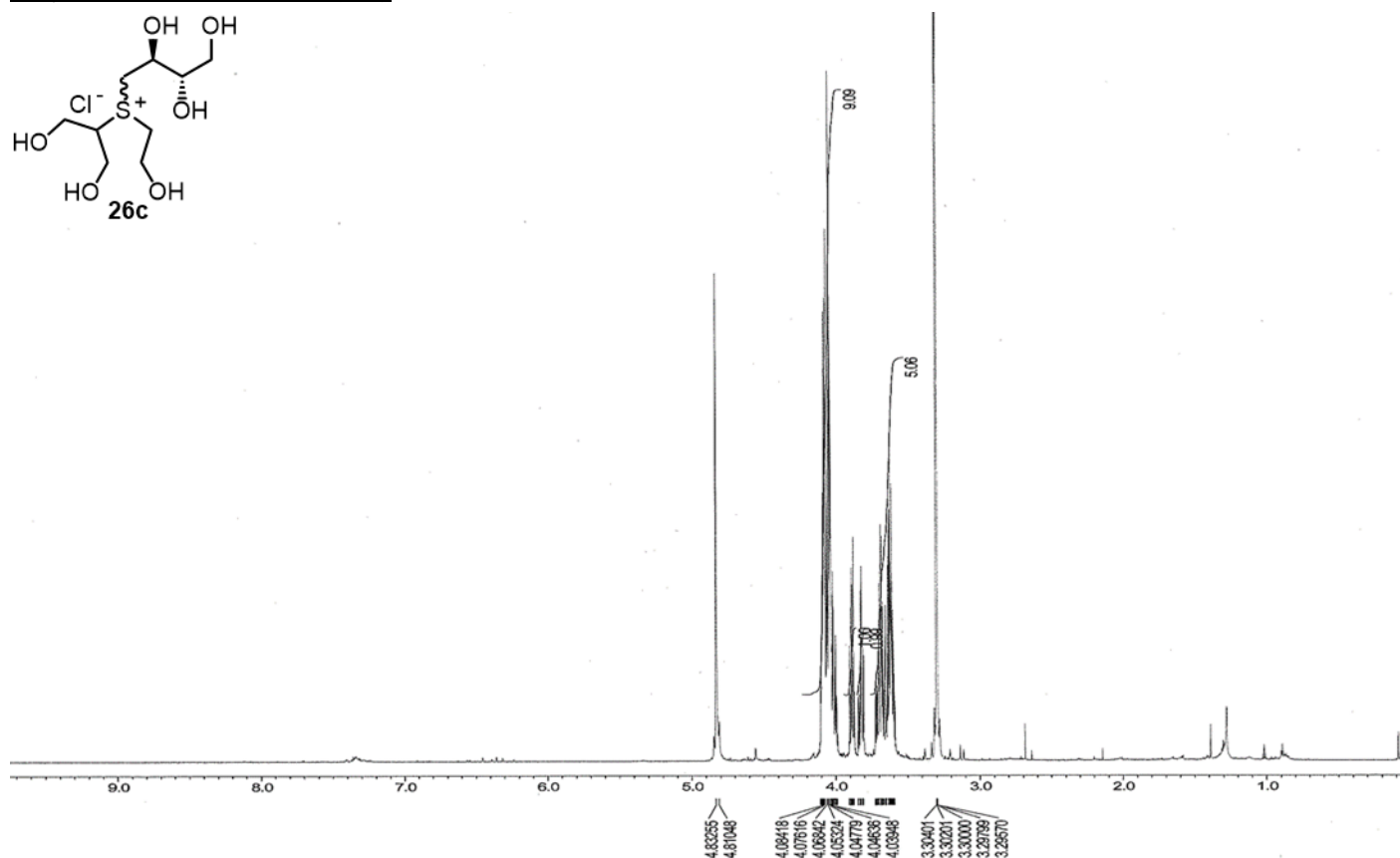
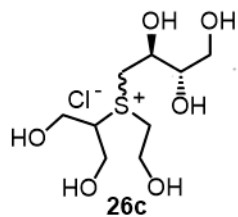
¹H NMR spectrum (800 MHz, CD₃OD) of (1,3-Dihydroxypropan-2-yl) (2-Hydroxyethyl) [(2*S*,3*S*)-2,3,4-Trihydroxybutyl] Sulfonium Methyl Sulfate (26b)



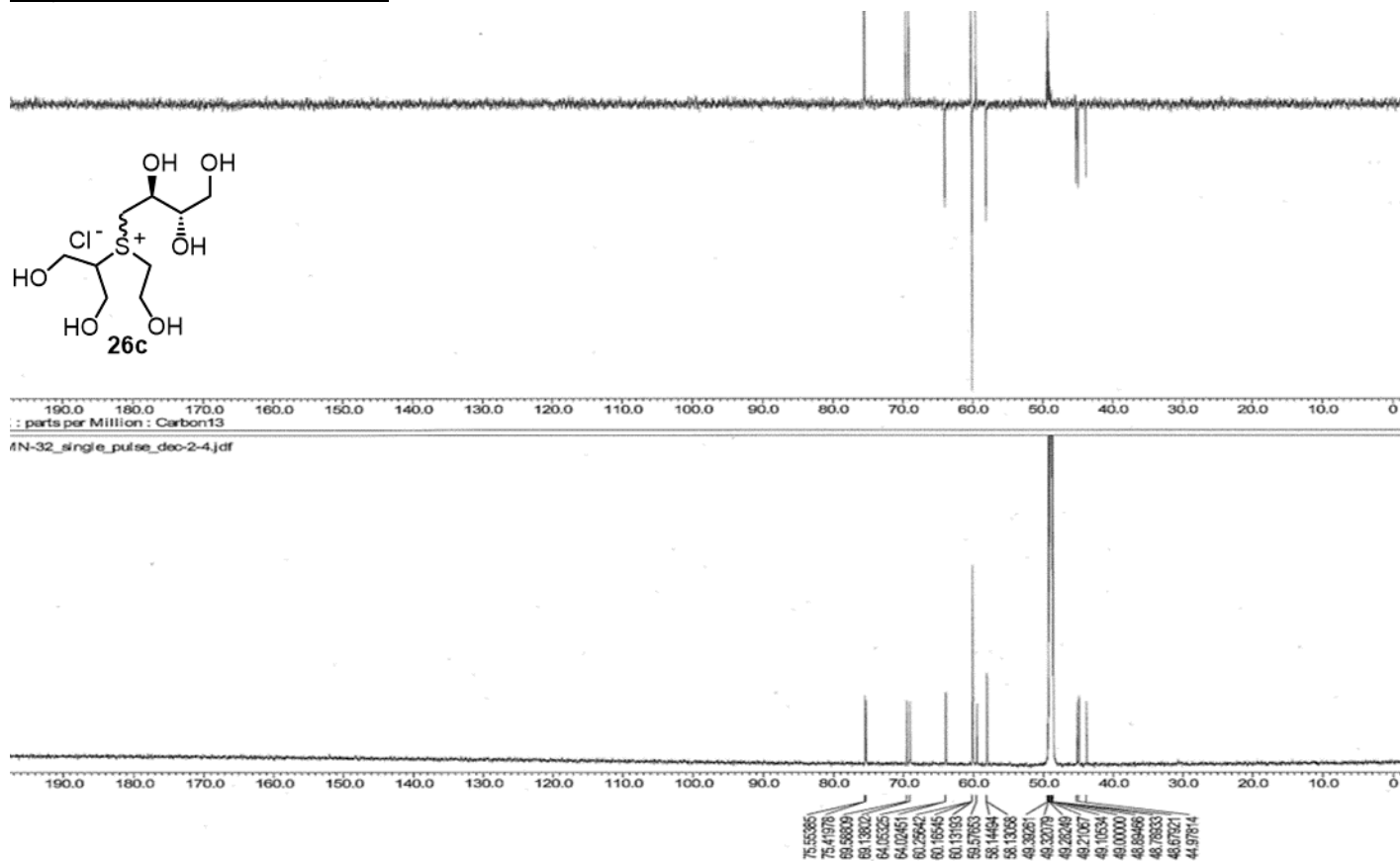
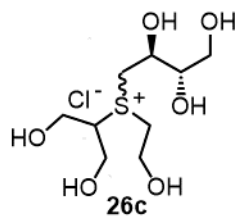
¹³C NMR spectrum (200 MHz, CD₃OD) of (1,3-Dihydroxypropan-2-yl) (2-Hydroxyethyl) [(2*S*,3*S*)-2,3,4-Trihydroxybutyl] Sulfonium Methyl Sulfate (26b)



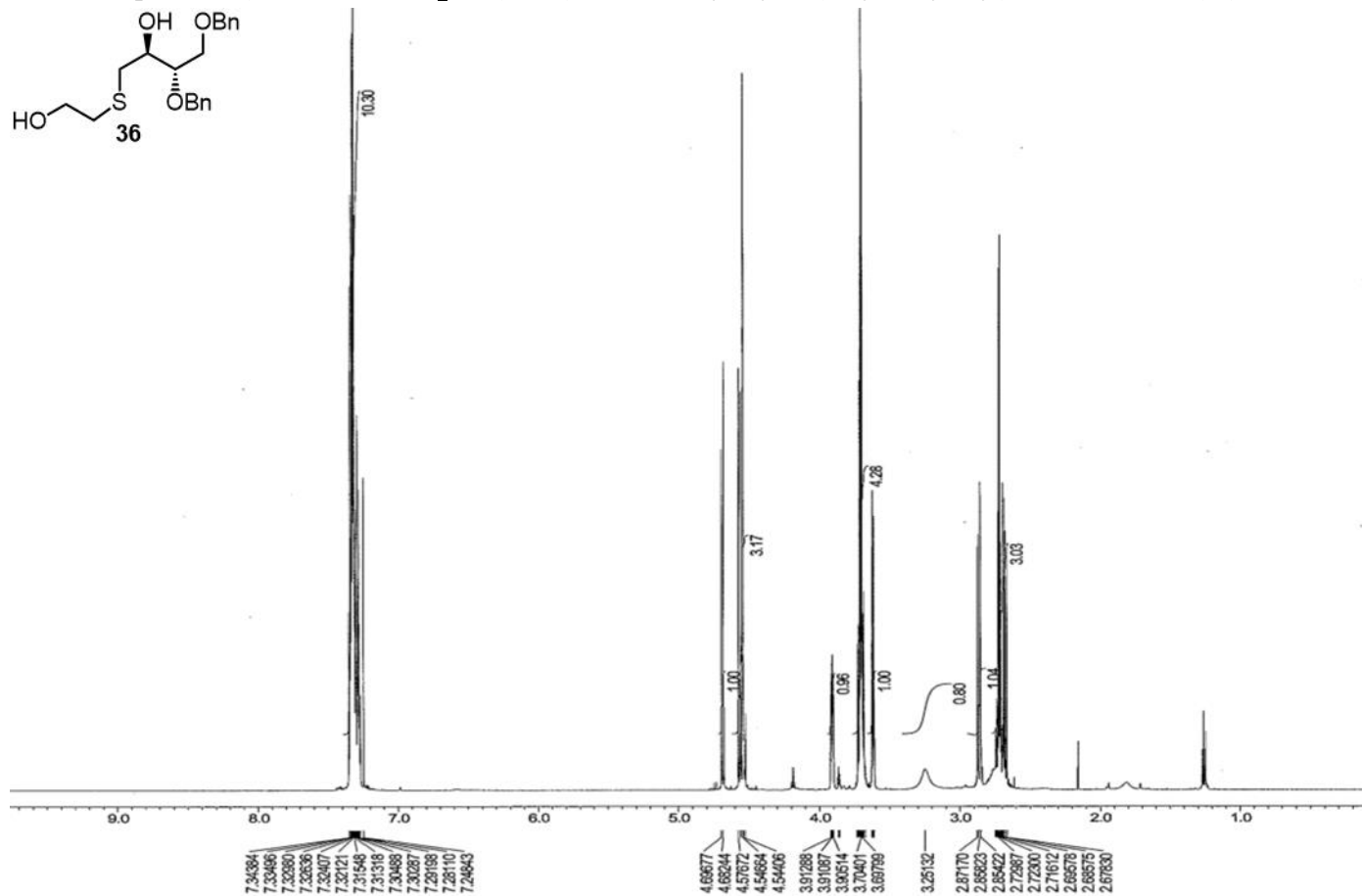
¹H NMR spectrum (800 MHz, CD₃OD) of (1,3-Dihydroxypropan-2-yl) (2-Hydroxyethyl) [(2*S*,3*S*)-2,3,4-trihydroxybutyl] Sulfonium Chloride (26c)



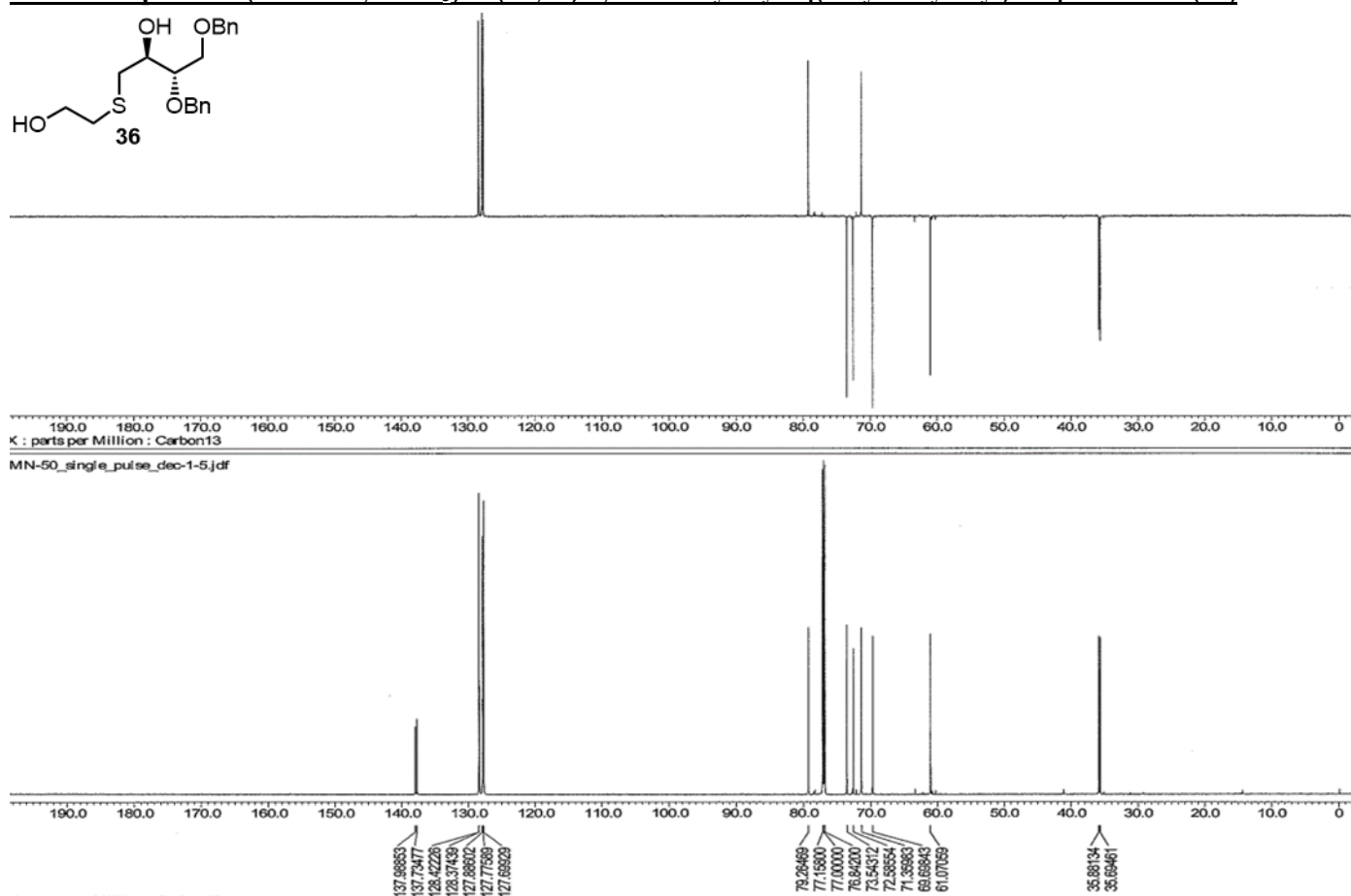
¹³C NMR spectrum (200 MHz, CD₃OD) of (1,3-Dihydroxypropan-2-yl) (2-Hydroxyethyl) [(2*S*,3*S*)-2,3,4-trihydroxybutyl] Sulfonium Chloride (26c)



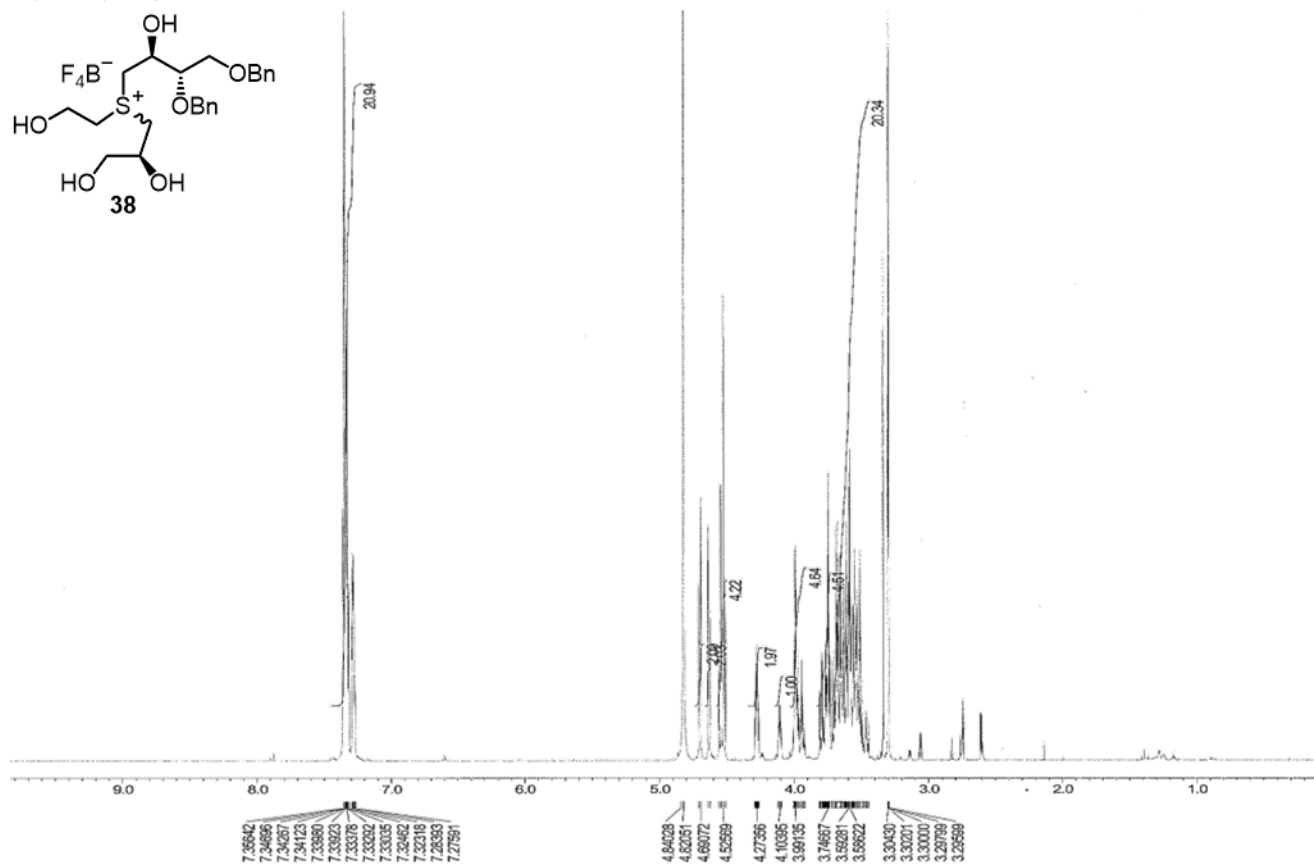
¹H NMR spectrum (800 MHz, CDCl₃) of (2*S*,3*S*)-3,4-Dibenzyloxy-1-[(2-hydroxyethyl)thio]butan-2-ol (36)



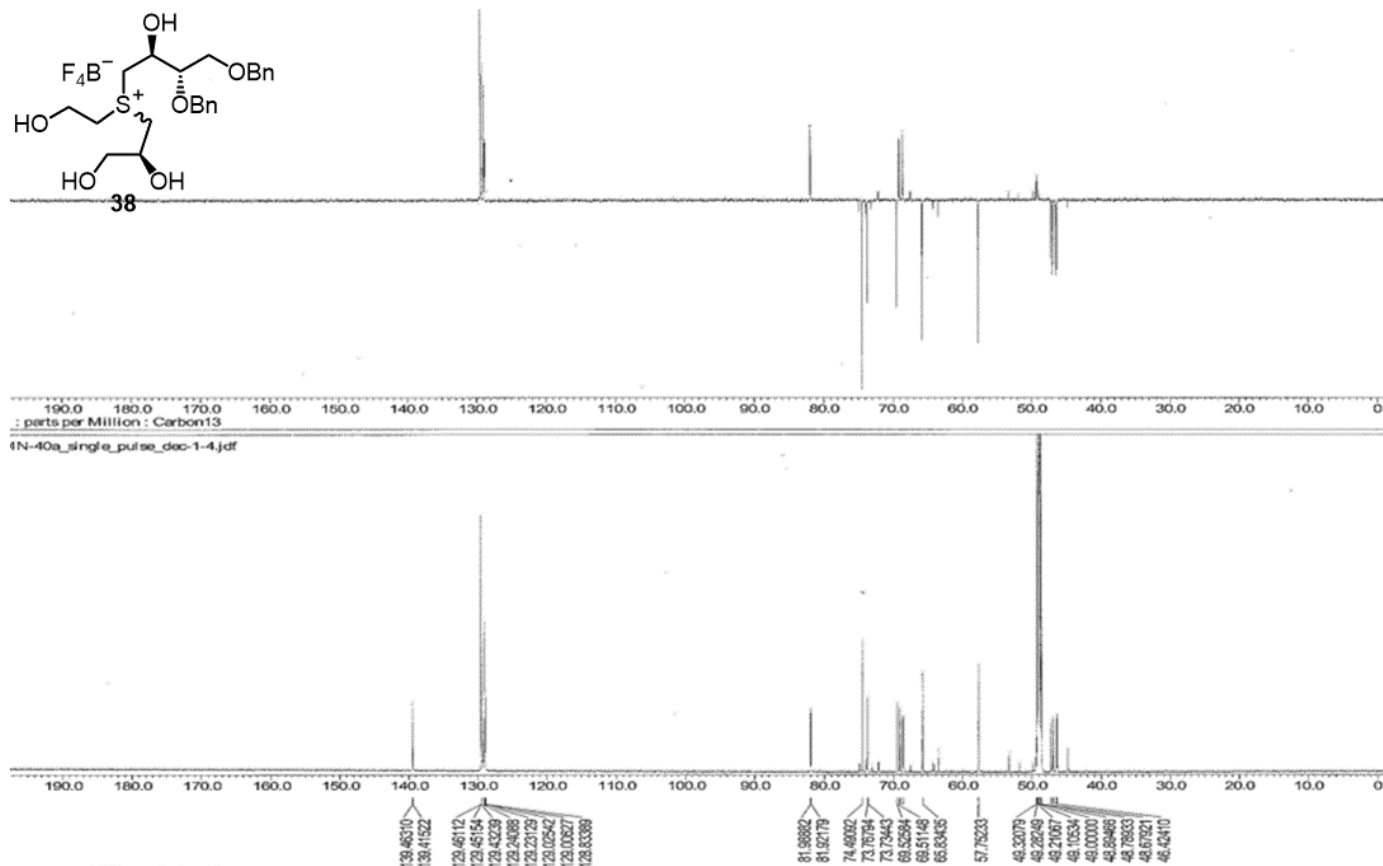
¹³C NMR spectrum (200 MHz, CDCl₃) of (2*S*,3*S*)-3,4-Dibenzyloxy-1-[(2-hydroxyethyl)thio]butan-2-ol (36)



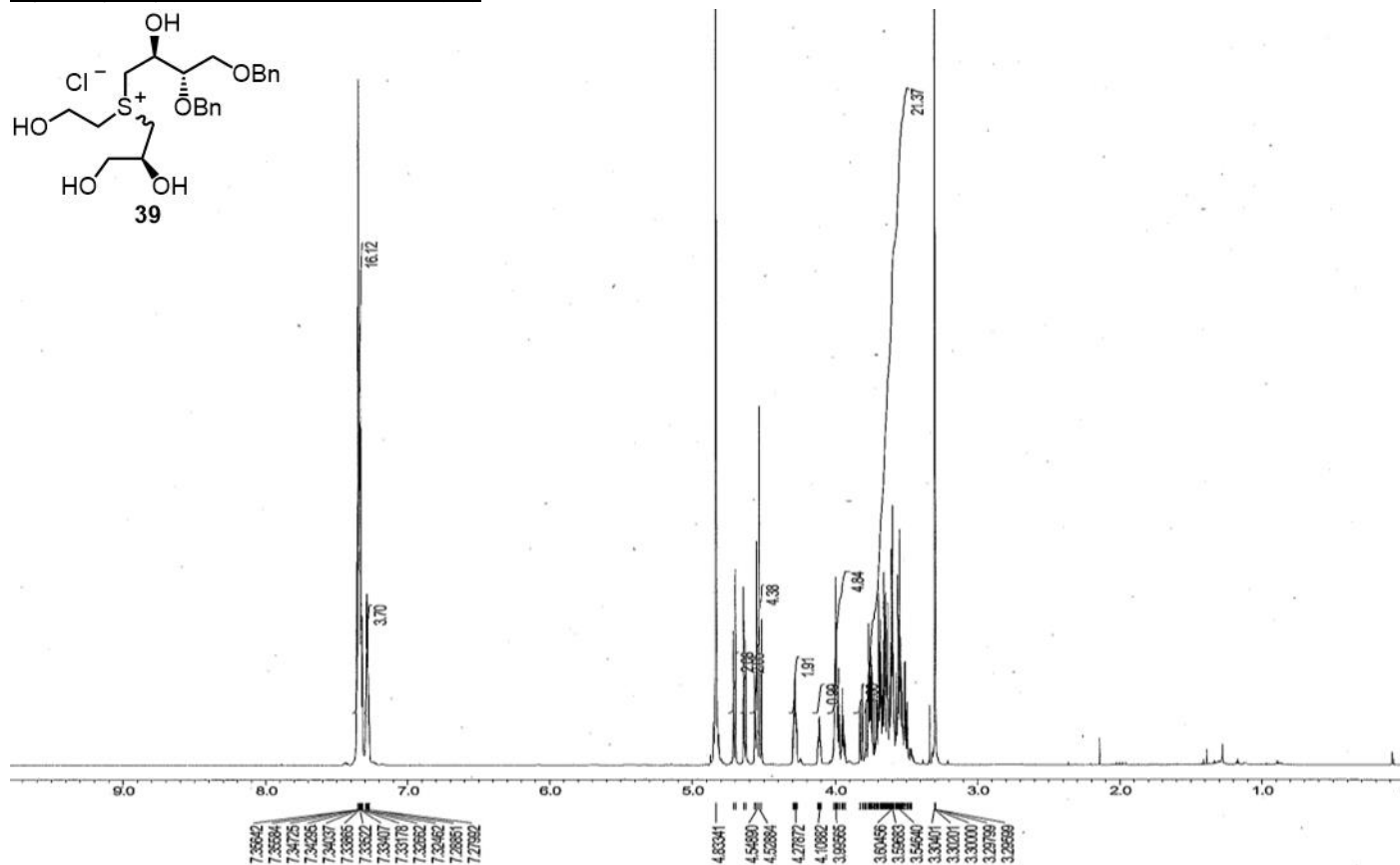
¹H NMR spectrum (800 MHz, CD₃OD) of ((2*S*,3*S*)-3,4-Dibenzoyloxy-2-hydroxybutyl) [(*S*)-2,3-dihydroxy propyl] (2-Hydroxyethyl) Sulfonium Tetrafluoroborate (38)



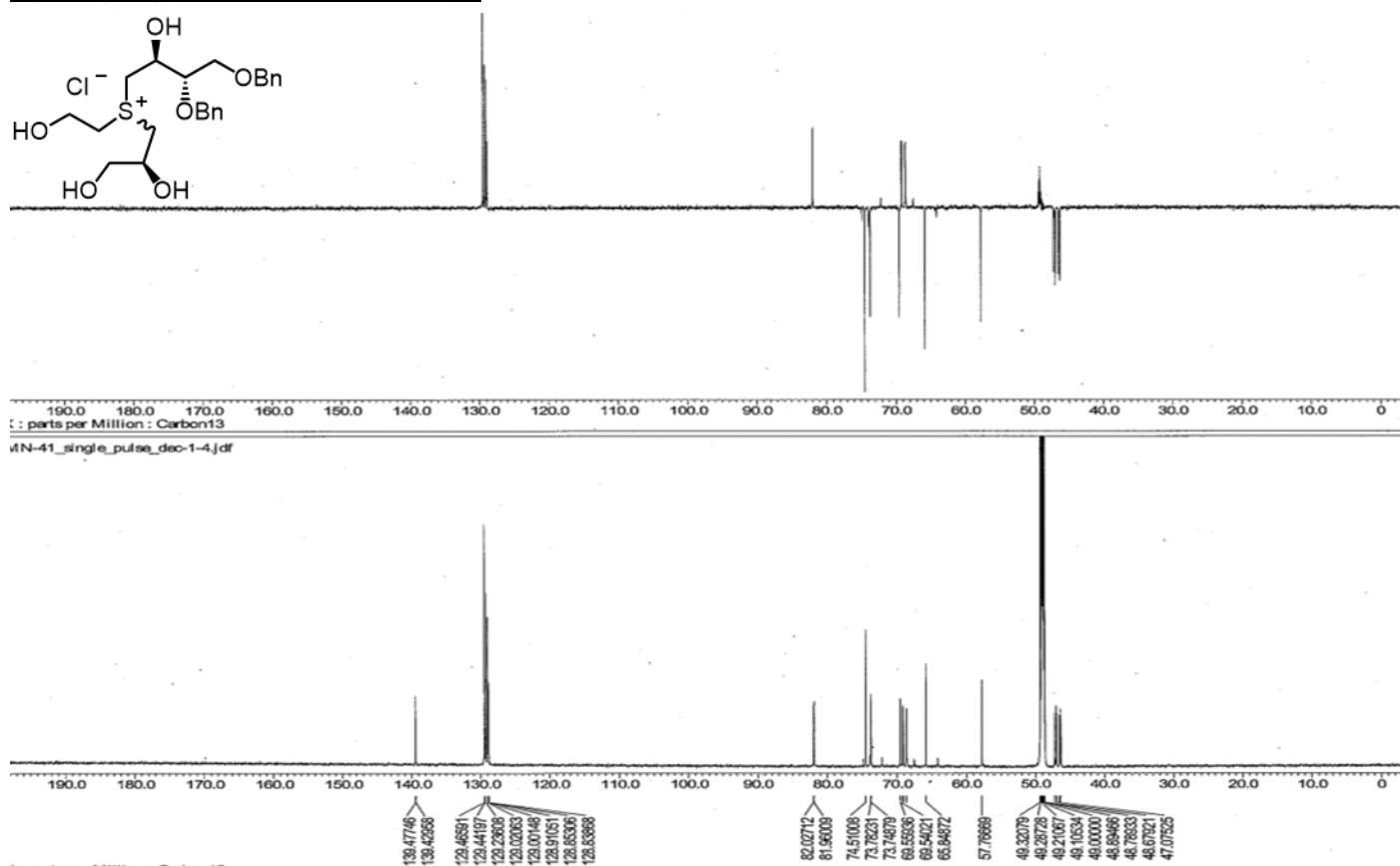
¹³C NMR spectrum (200 MHz, CD₃OD) of ((2*S*,3*S*)-3,4-Dibenzoyloxy-2-hydroxybutyl) [(*S*)-2,3-dihydroxy propyl] (2-Hydroxyethyl) Sulfonium Tetrafluoroborate (38)



¹H NMR spectrum (800 MHz, CD₃OD) of ((2*S*,3*S*)-3,4-Dibenzoyloxy-2-hydroxybutyl) [(*S*)-2,3-dihydroxy propyl] (2-Hydroxyethyl) Sulfonium Chloride (39)

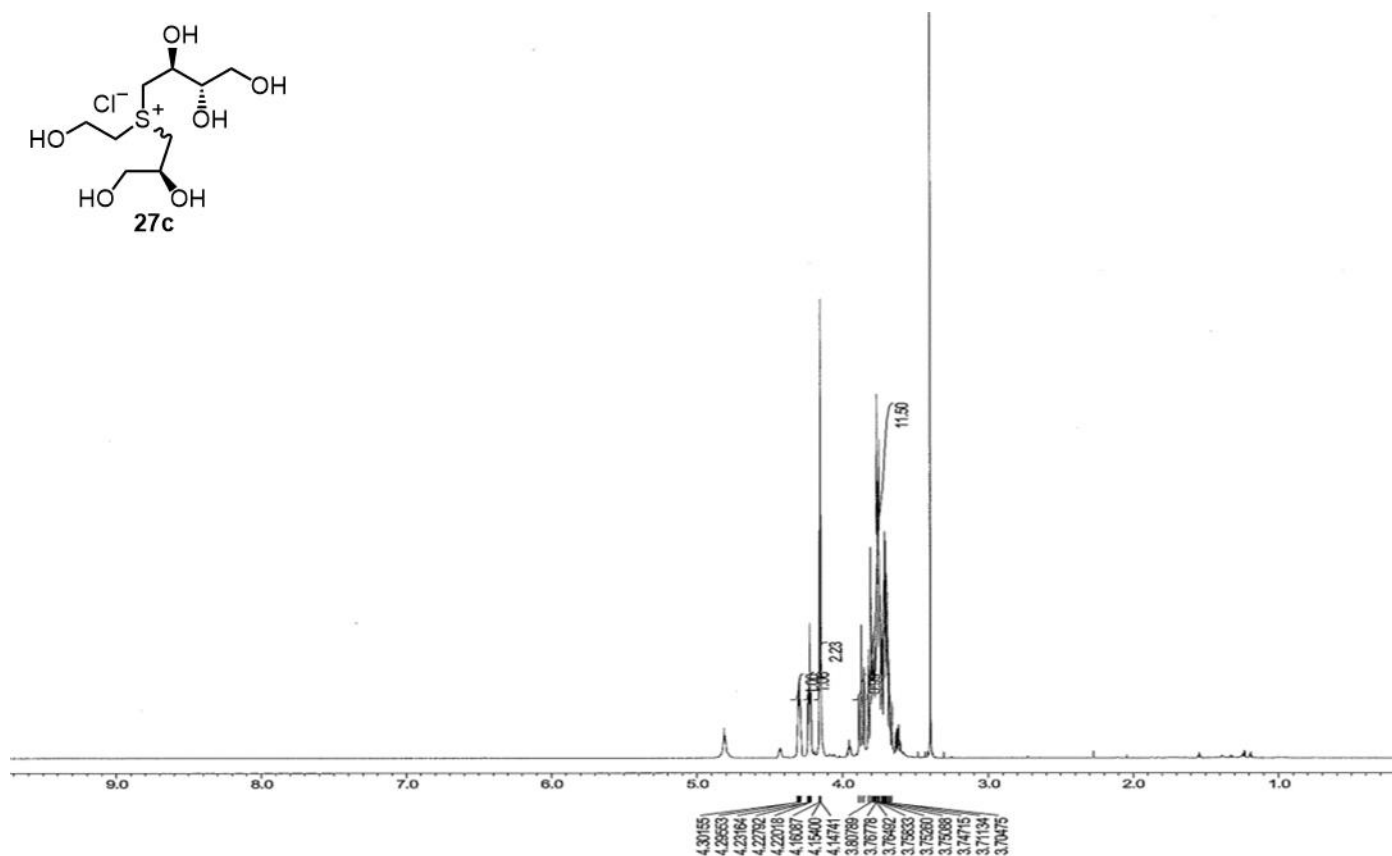
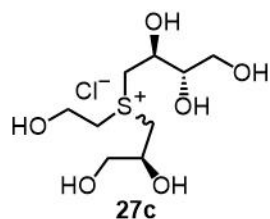


¹³C NMR spectrum (200 MHz, CD₃OD) of ((2*S*,3*S*)-3,4-Dibenzoyloxy-2-hydroxybutyl) [(*S*)-2,3-dihydroxy propyl] (2-Hydroxyethyl) Sulfonium Chloride (39)



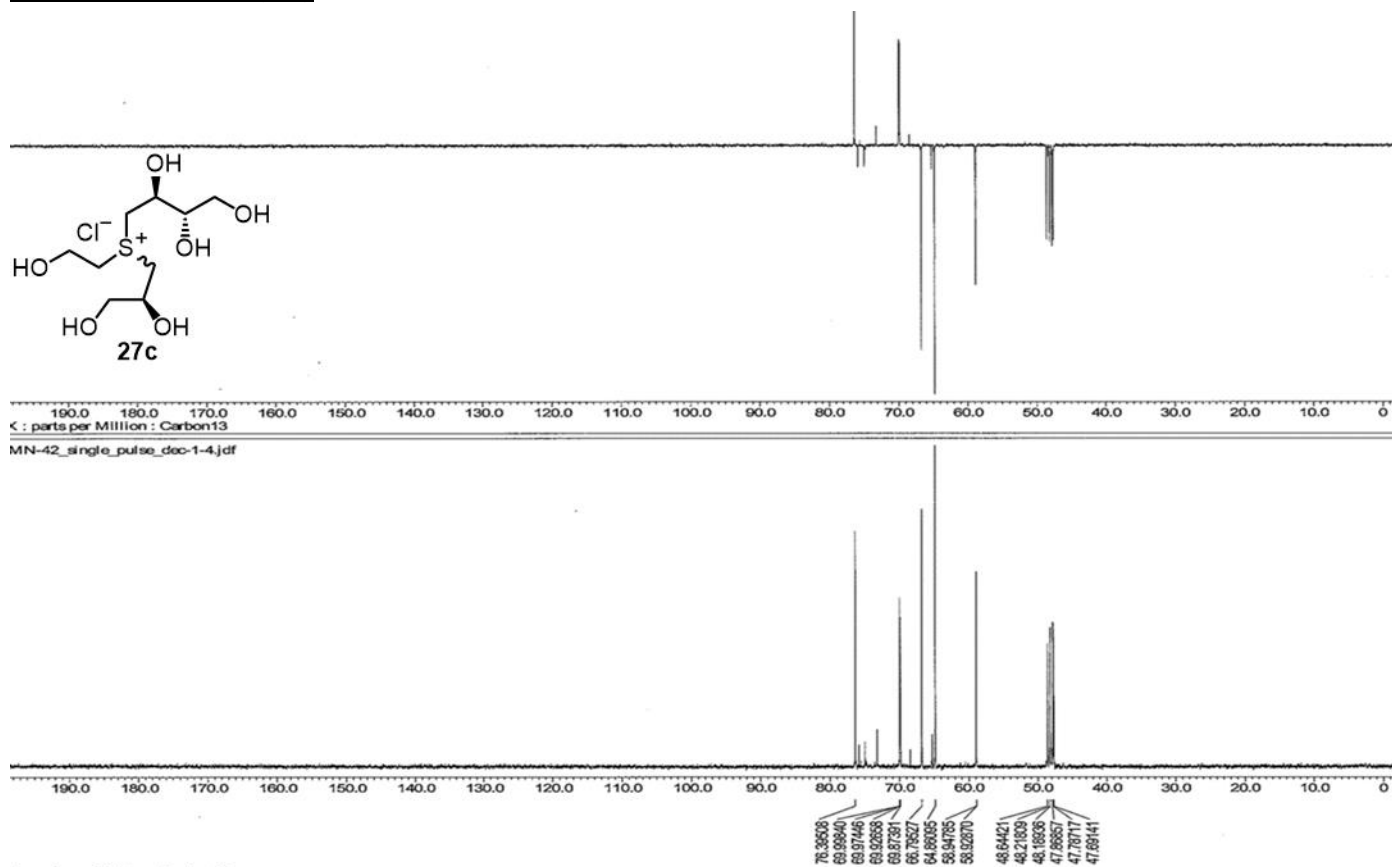
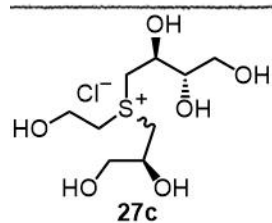
¹H NMR spectrum (800 MHz, D₂O) of [(*S*)-2,3-Dihydroxypropyl] (2-Hydroxyethyl) ((*2S,3S*)-2,3,4-trihydroxybutyl) Sulfonium Chloride (27c)

Sulfonium Chloride (27c)

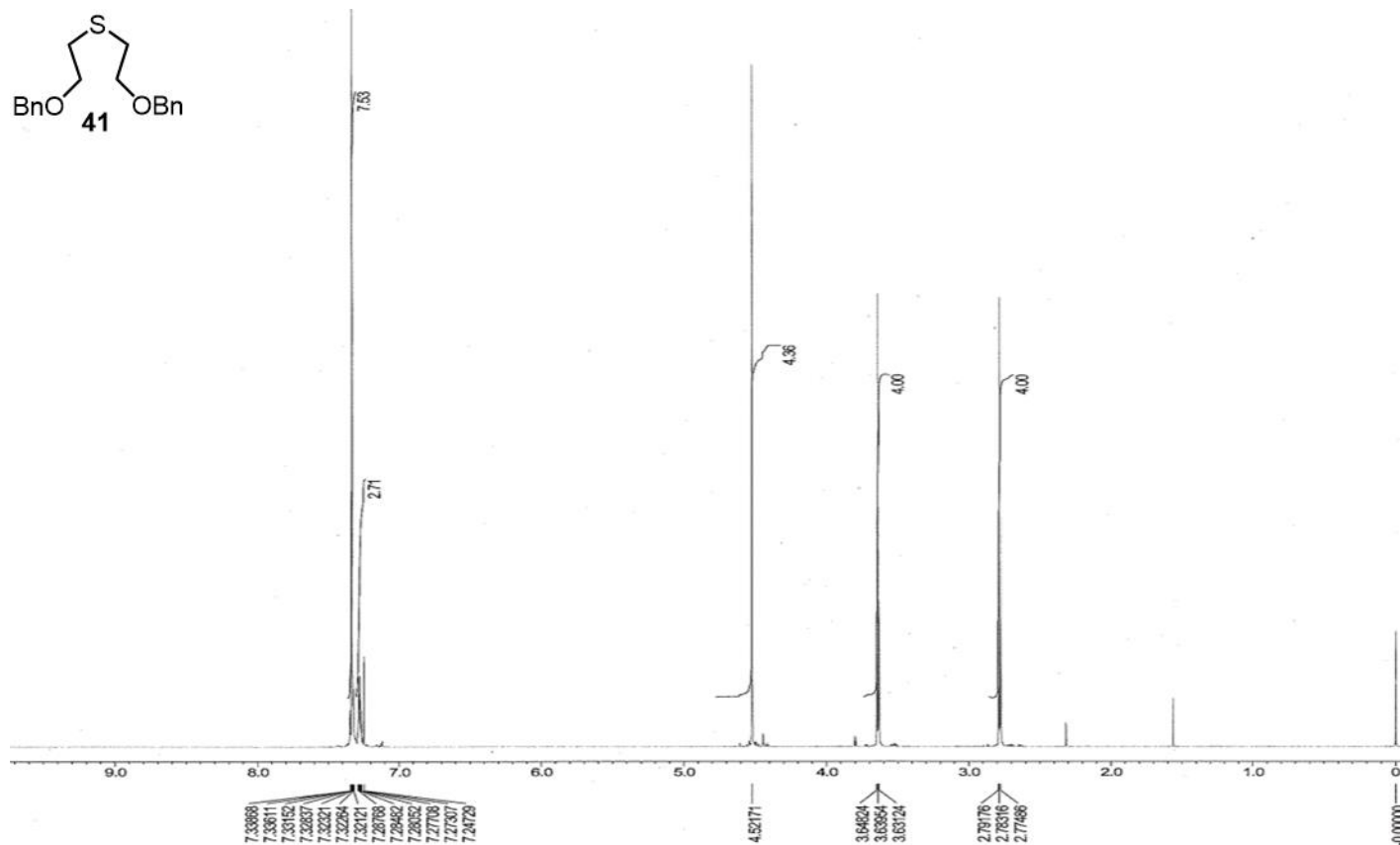


¹³C NMR spectrum (200 MHz, D₂O) of [(*S*)-2,3-Dihydroxypropyl] (2-Hydroxyethyl) ((*2S,3S*)-2,3,4-trihydroxybutyl) Sulfonium Chloride (27c)

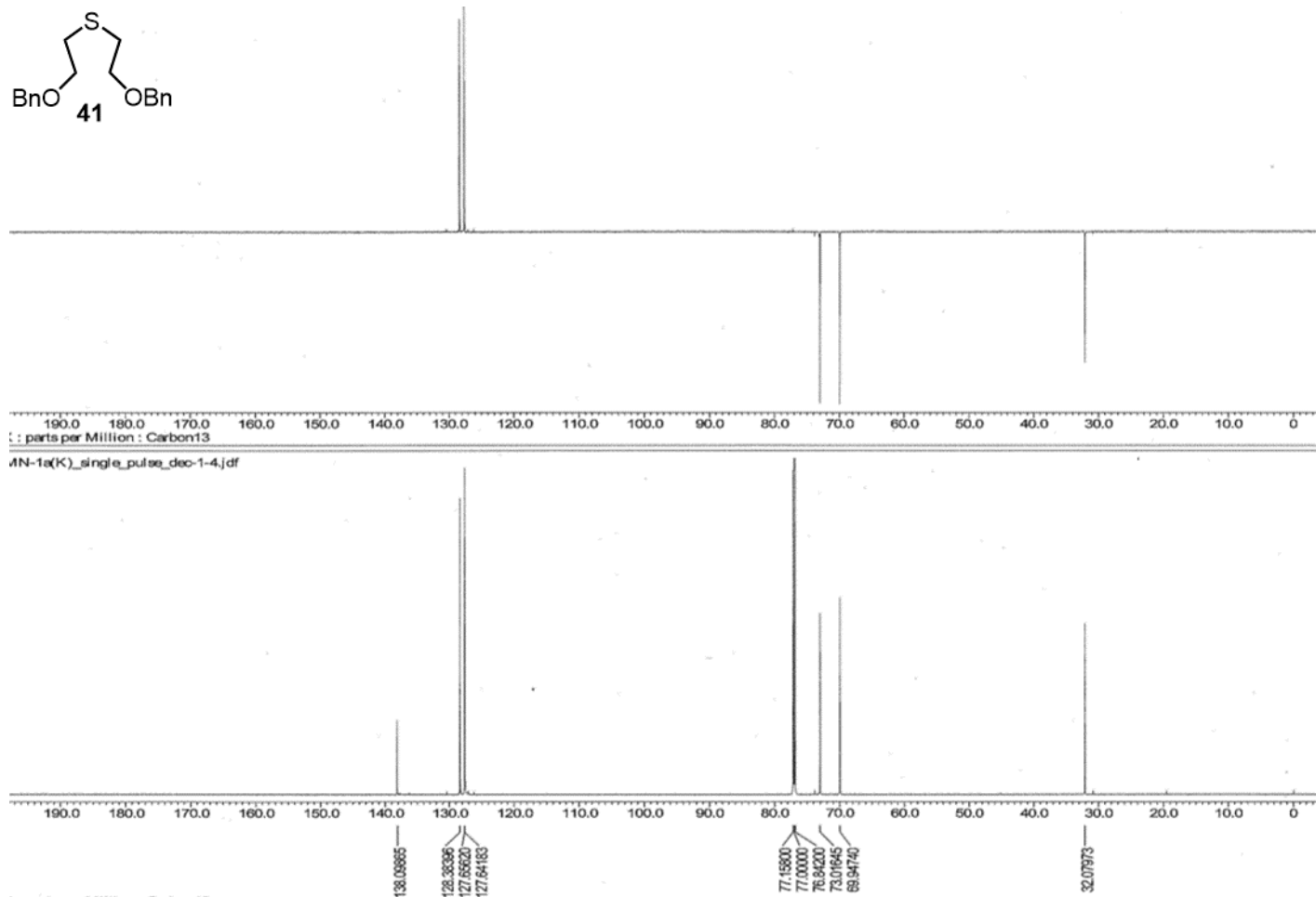
Sulfonium Chloride (27c)



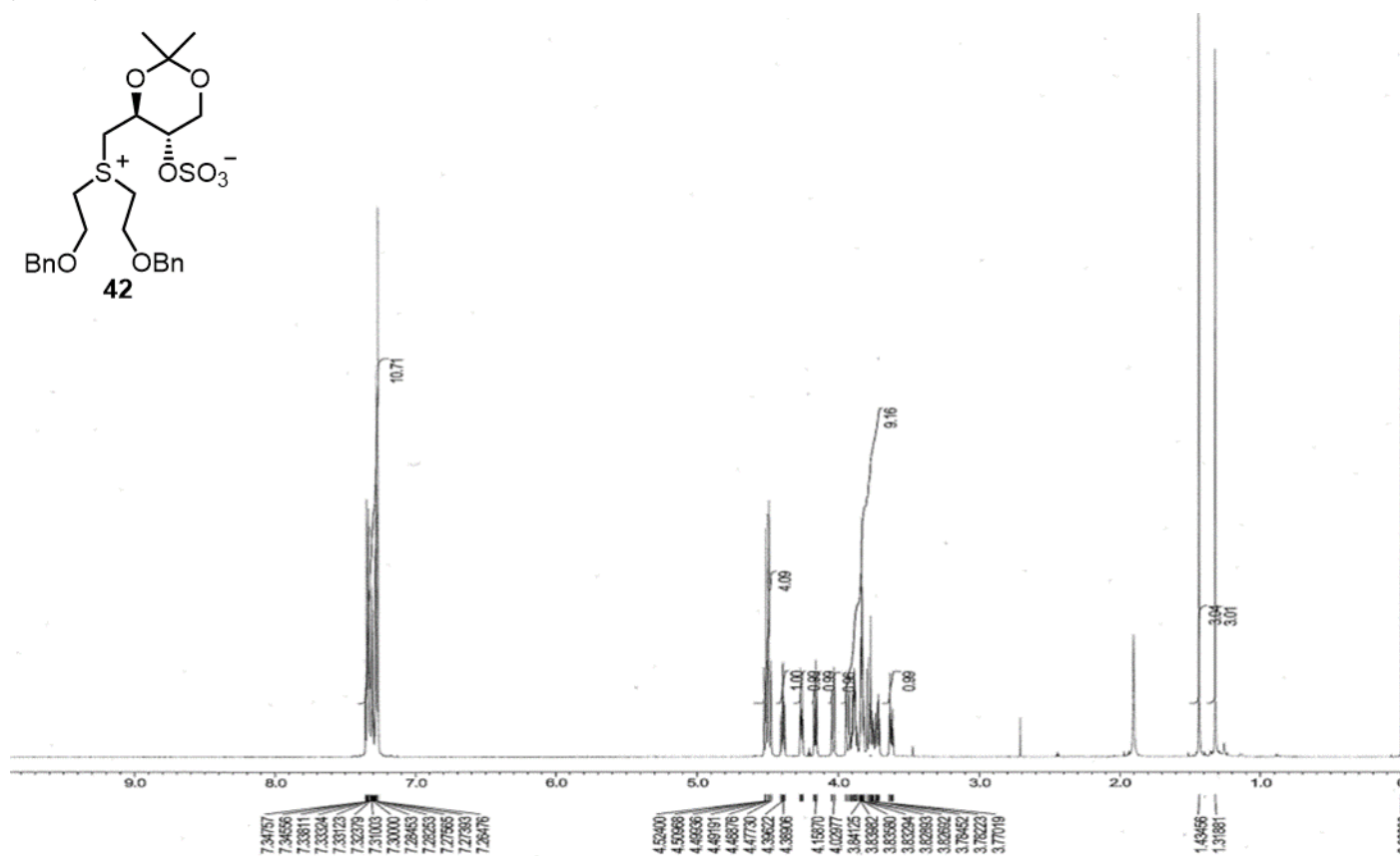
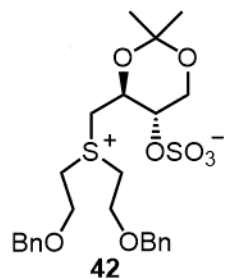
¹H NMR spectrum (800 MHz, CDCl₃) of Di-*O*-benzyl-2,2'-thiodiethanol (41)



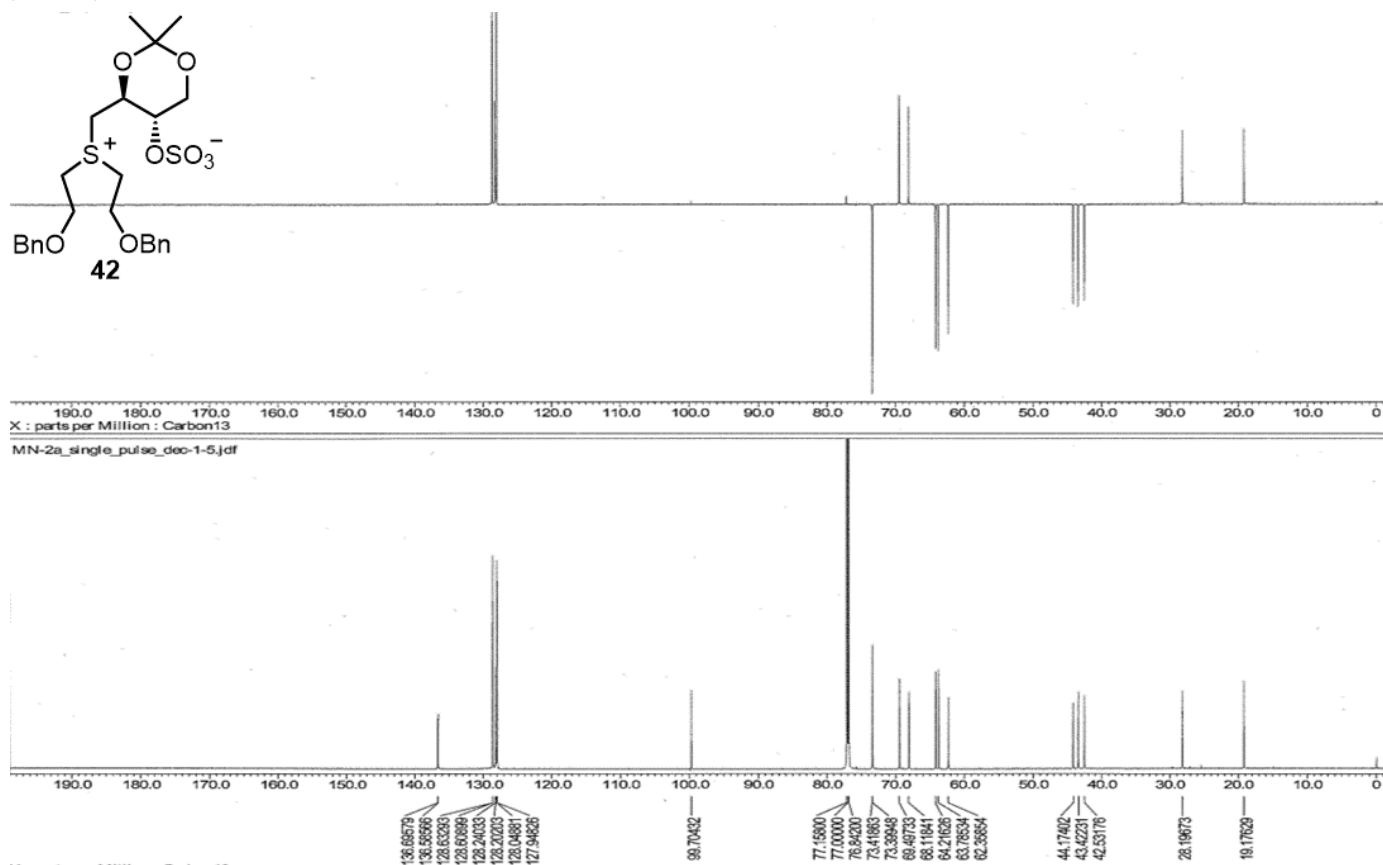
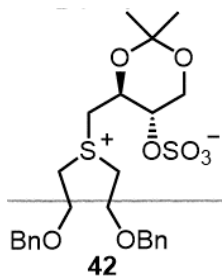
¹³C NMR spectrum (200 MHz, CDCl₃) of Di-*O*-benzyl-2,2'-thiodiethanol (41)



¹H NMR spectrum (800 MHz, CDCl₃) of Di(2-benzyloxyethyl) [(4*S*,5*S*)-2,2-Dimethyl -5-sulfoxy-1,3-dioxan-4-ylmethyl] Sulfonium Inner Salt (42)

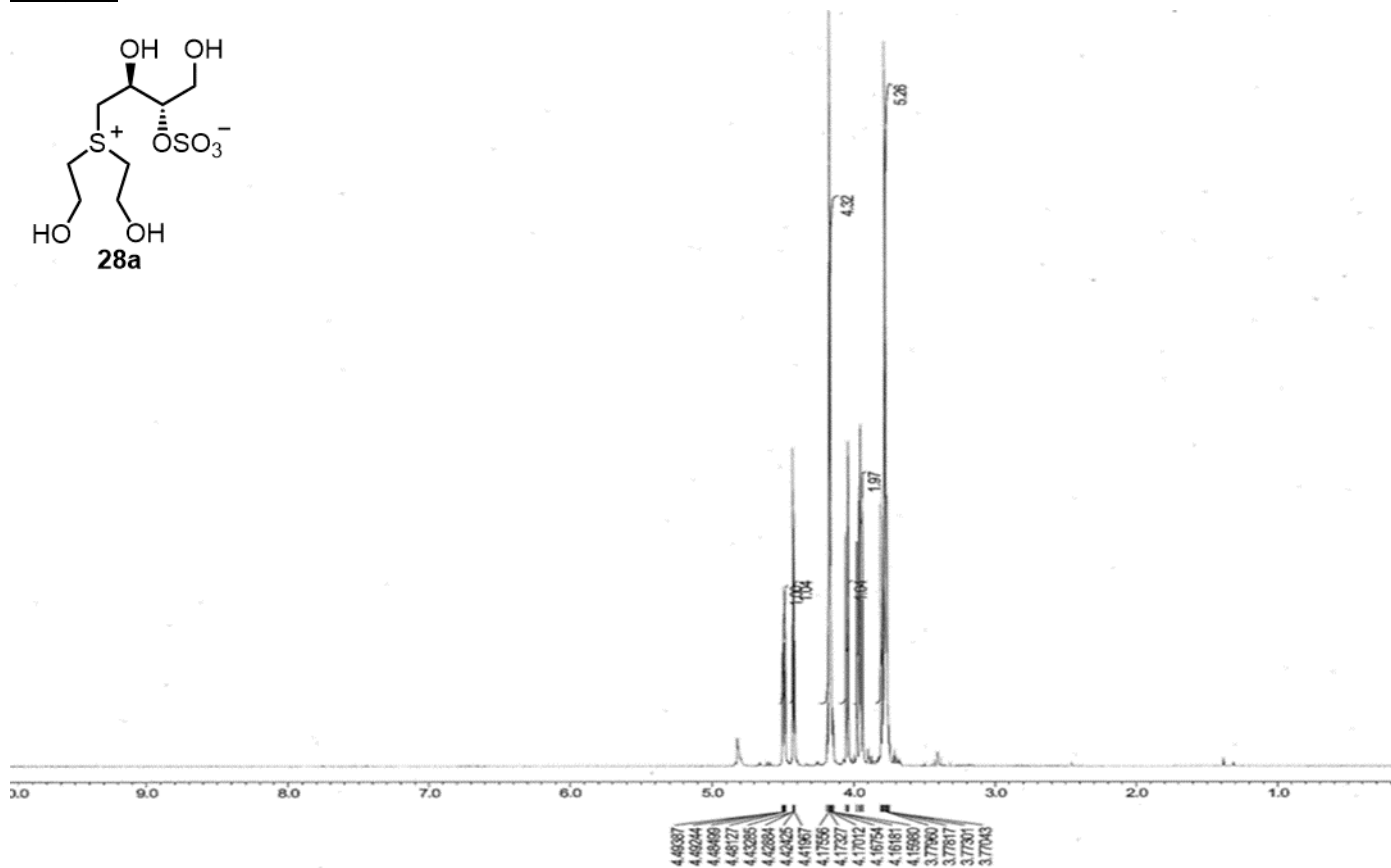


¹³C NMR spectrum (200 MHz, CDCl₃) of Di(2-benzyloxyethyl) [(4*S*,5*S*)-2,2-Dimethyl -5-sulfoxy-1,3-dioxan-4-ylmethyl] Sulfonium Inner Salt (42)



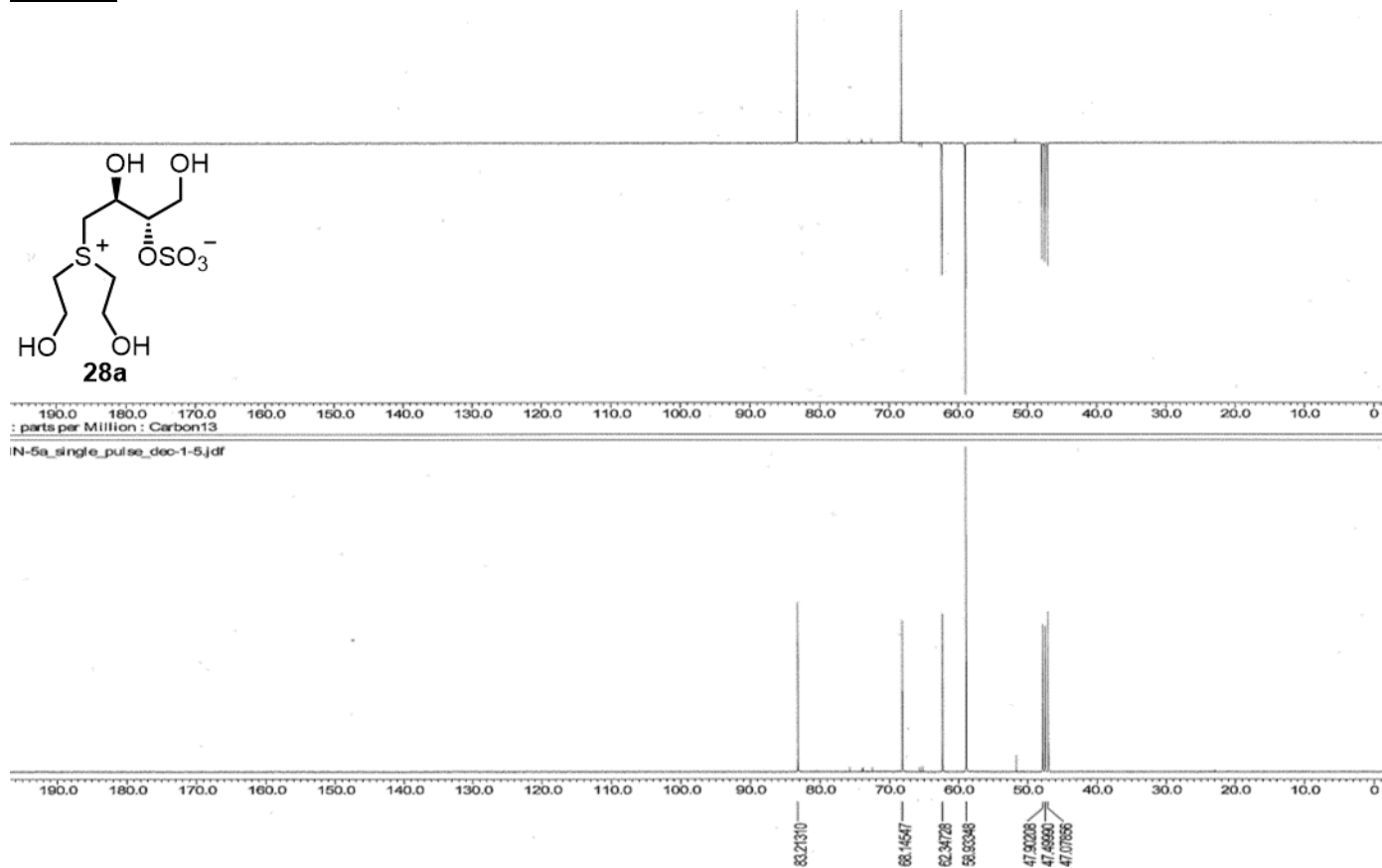
¹H NMR spectrum (800 MHz, D₂O) of [(2*S*,3*S*)-2,4-Dihydroxy-3-sulfoxybutyl] Di(2-hydroxyethyl) Sulfonium Inner

Salt(28a)

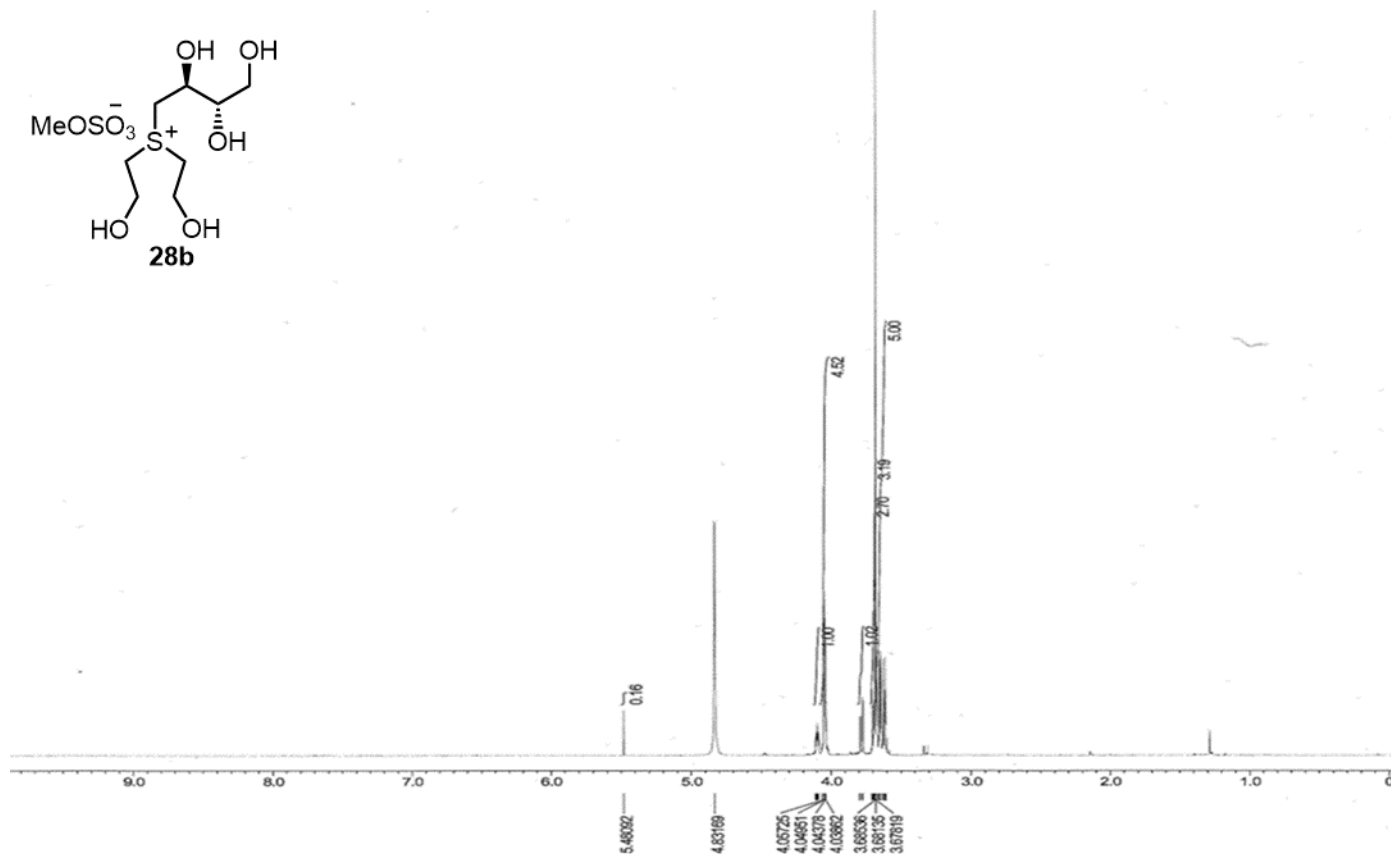
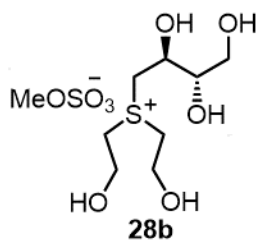


¹³C NMR spectrum (200 MHz, D₂O) of [(2*S*,3*S*)-2,4-Dihydroxy-3-sulfoxybutyl] Di(2-hydroxyethyl) Sulfonium Inner

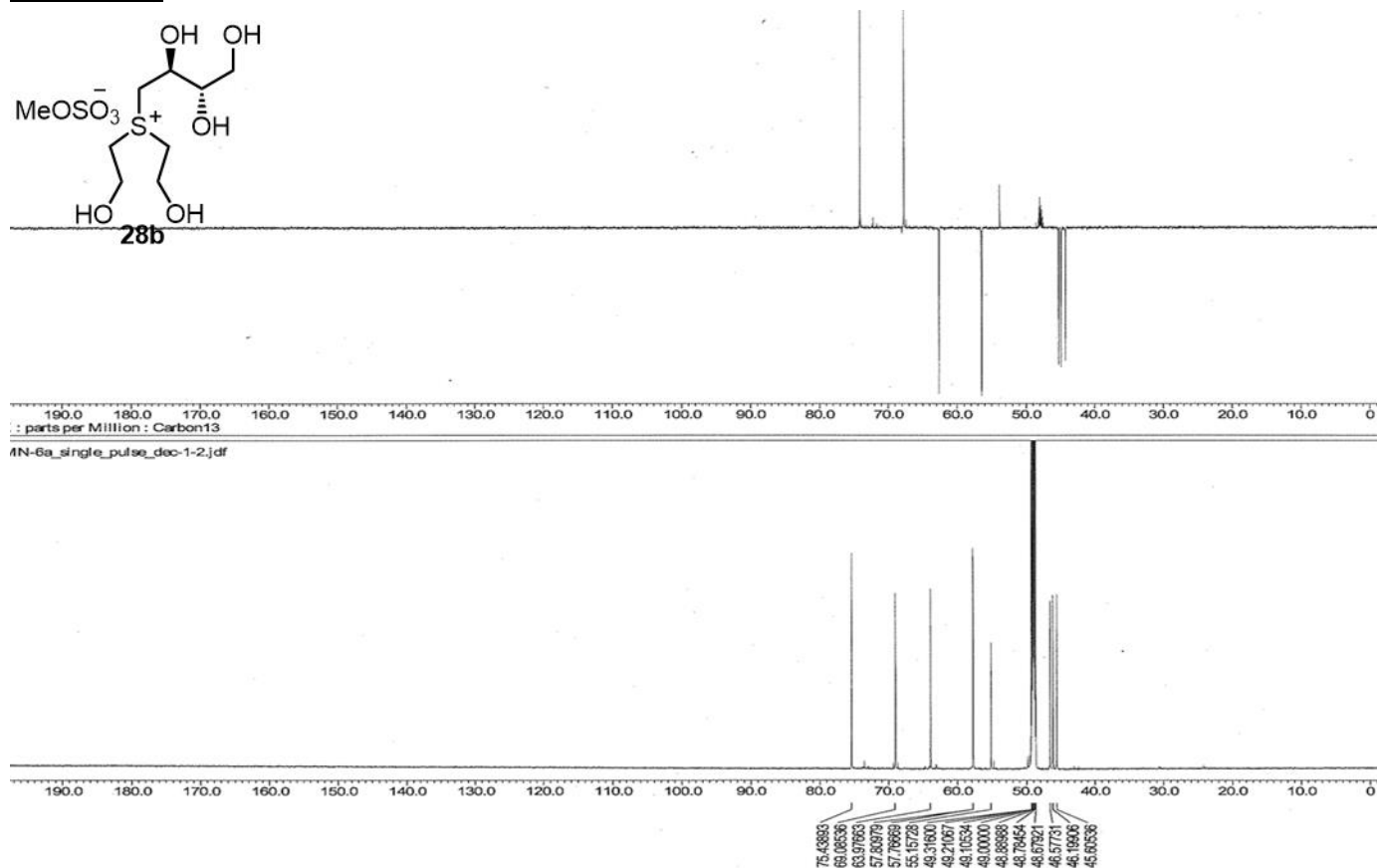
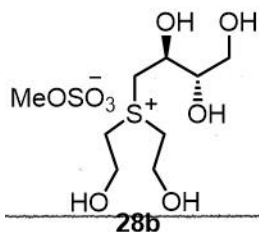
Salt(28a)



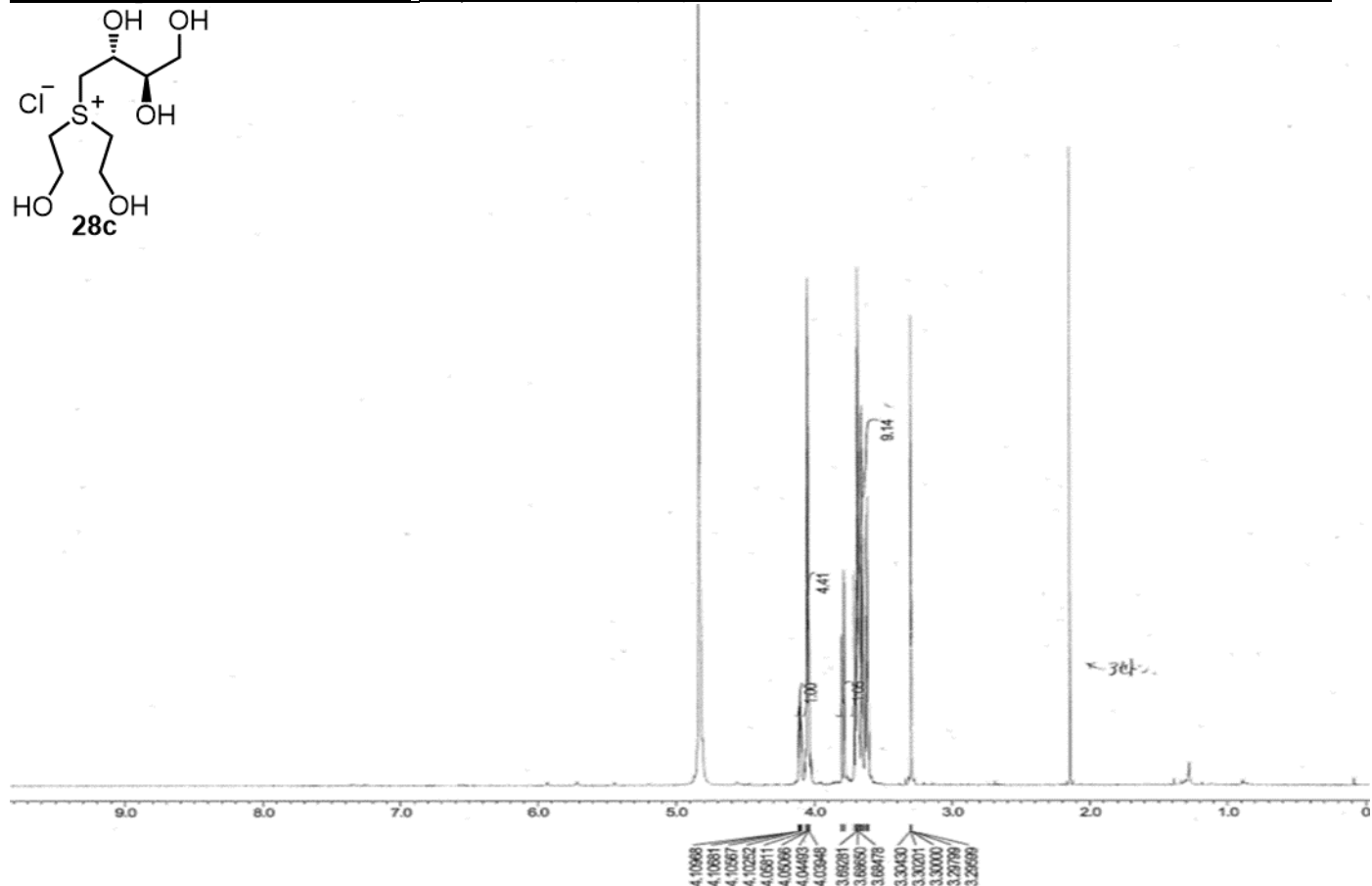
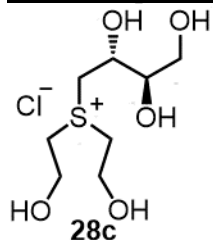
¹H NMR spectrum (800 MHz, CD₃OD) of Di(2-hydroxyethyl) [(2*S*,3*S*)-2,3,4-Trihydroxybutyl] Sulfonium Methyl Sulfate (28b)



¹³C NMR spectrum (200 MHz, CD₃OD) of Di(2-hydroxyethyl) [(2*S*,3*S*)-2,3,4-Trihydroxybutyl] Sulfonium Methyl Sulfate (28b)



¹H NMR spectrum (800 MHz, CD₃OD) of Di(2-hydroxyethyl) [(2*S*,3*S*)-2,3,4-Trihydroxybutyl] Sulfonium Chloride (28c)



¹³C NMR spectrum (200 MHz, CD₃OD) of Di(2-hydroxyethyl) [(2*S*,3*S*)-2,3,4-Trihydroxybutyl] Sulfonium Chloride (28c)

