

Supporting Information

Spiro bicyclo-[2.2.2]octane derivatives as paclitaxel mimetics. Synthesis and toxicity evaluation in breast cancer cell lines.

Sophie Manner, ^{*a} Viveca T. Oltner, ^a Stina Oredsson, ^b Ulf Ellervik^{*a} and Torbjörn Frejd^a

^a Center for Analysis and Synthesis, Chemical Center, Lund University, P.O. Box 124, SE-221 00 Lund, Sweden. Fax: +46 46 2220209; Tel: +46 46 2228220; E-mail: ulf.ellervik@chem.lu.se

^b Department of Biology, Lund University, Sölvegatan 35A, SE-223 62 Lund. E-mail: stina.oredsson@biol.lu.se

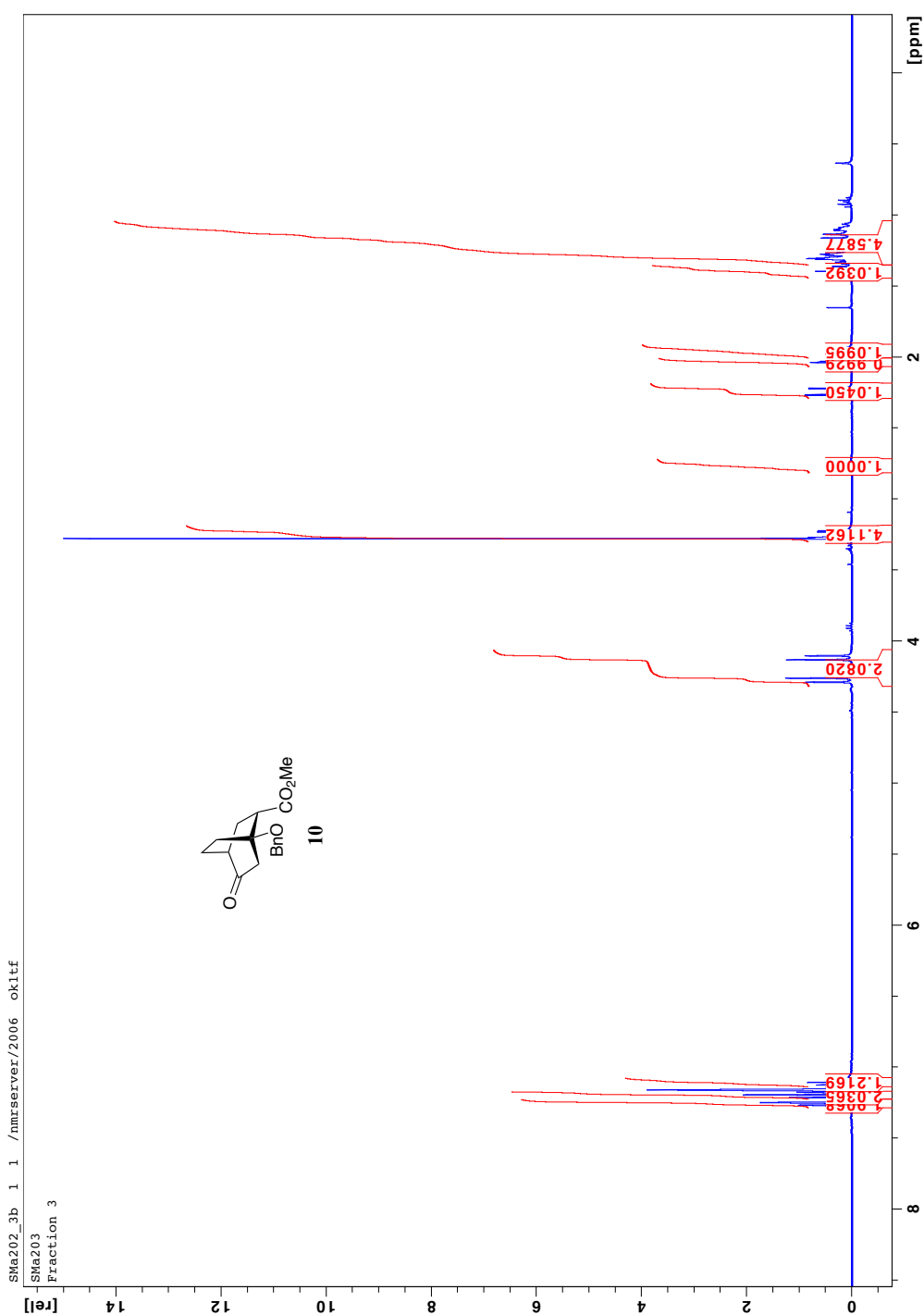
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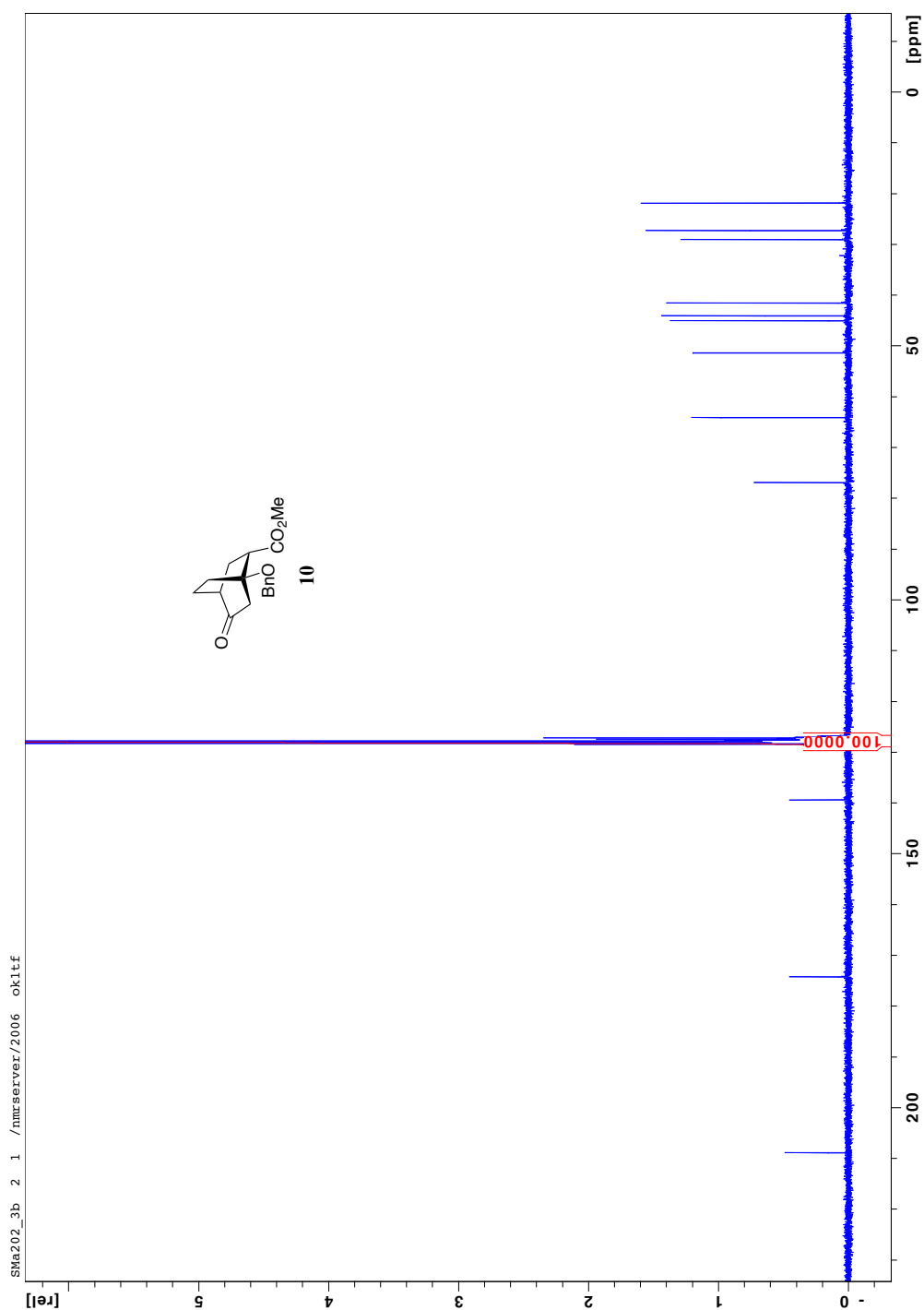
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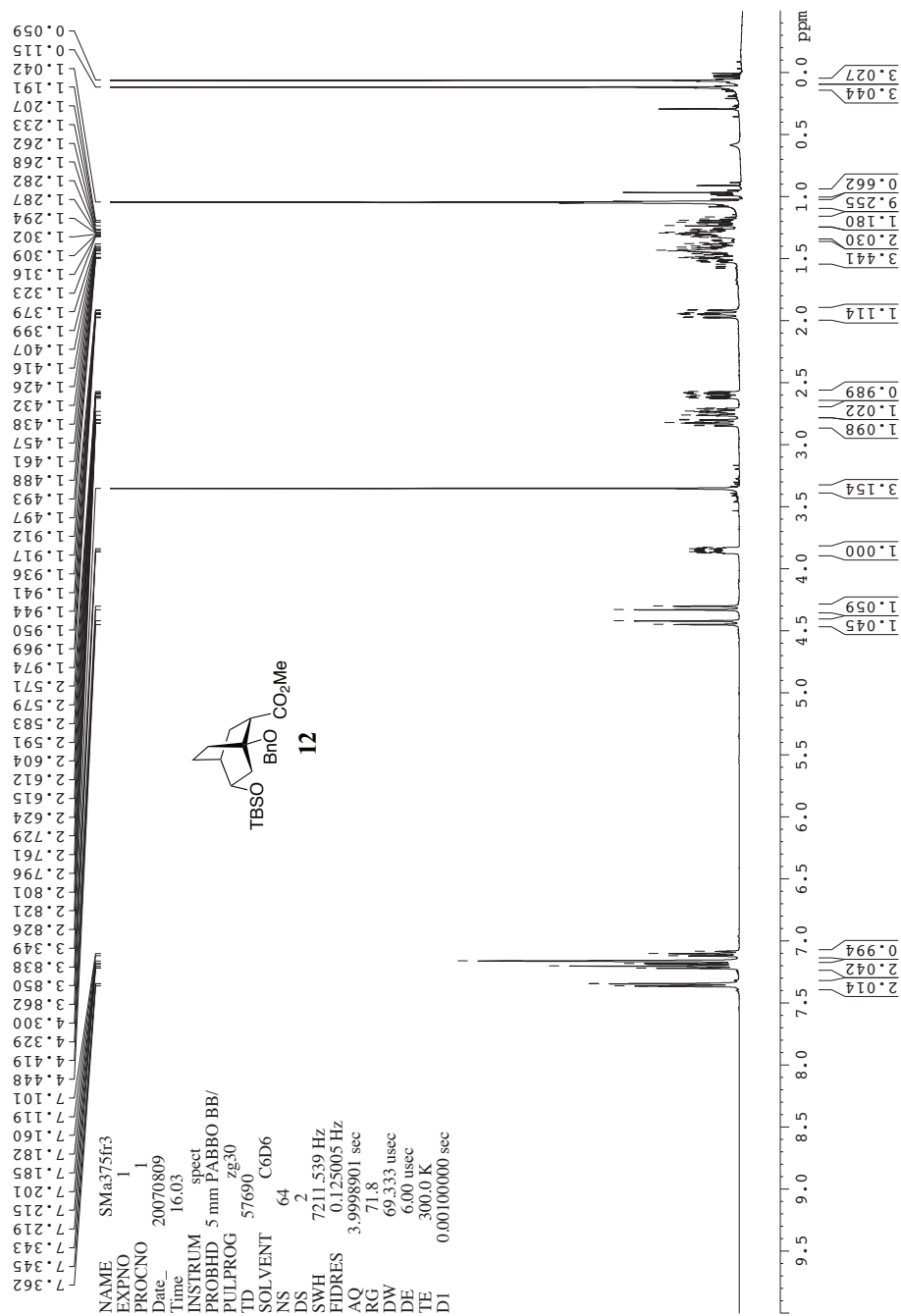
¹H-NMR (±)-1-Benzyloxy-5-oxo-bicyclo[2.2.2]octane-2-endo-carboxylic acid methyl ester (**10**).



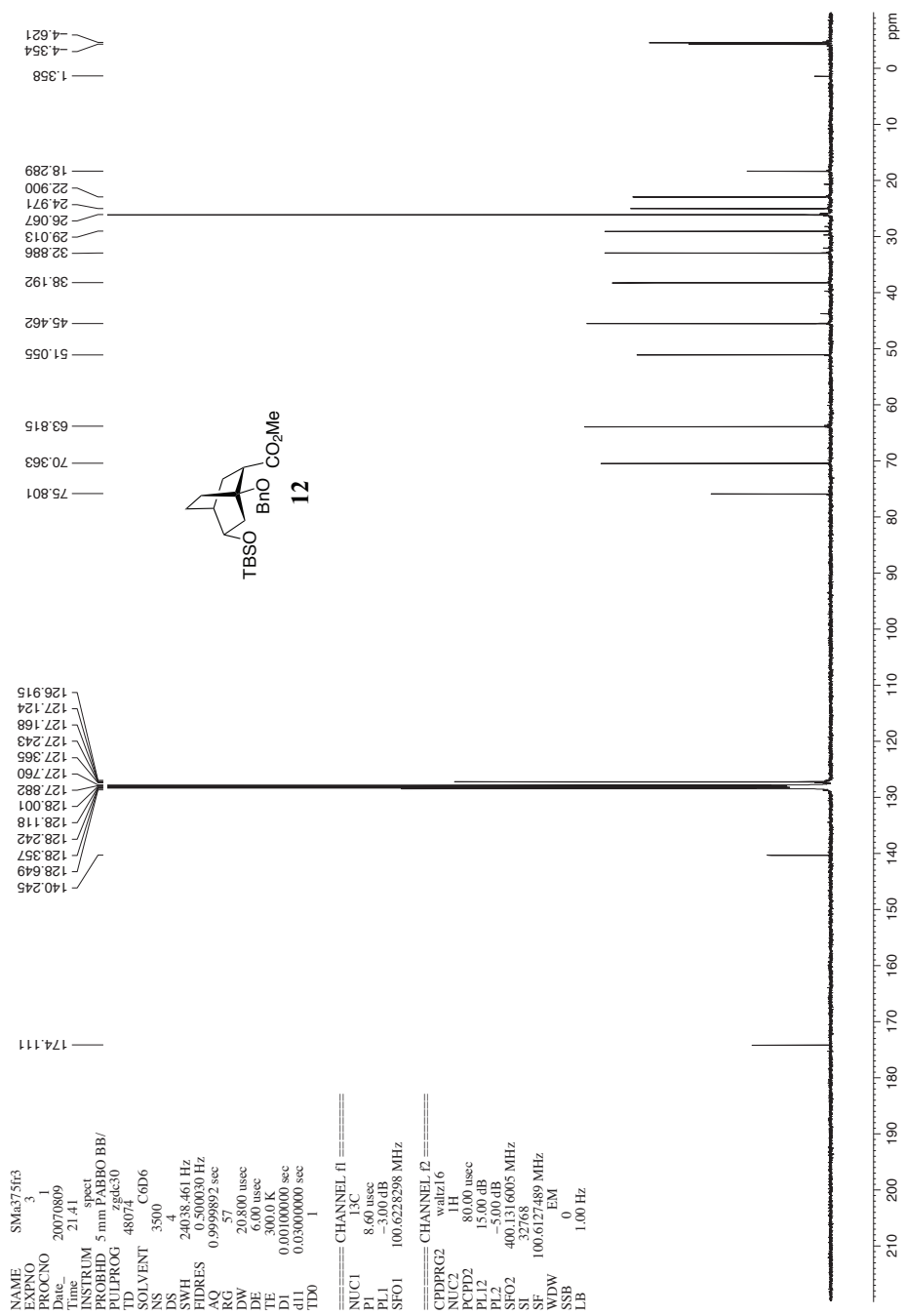
^{13}C -NMR ($\pm$)-1-Benzoyloxy-5-oxo-bicyclo[2.2.2]octane-2-endo-carboxylic acid methyl ester (**10**).



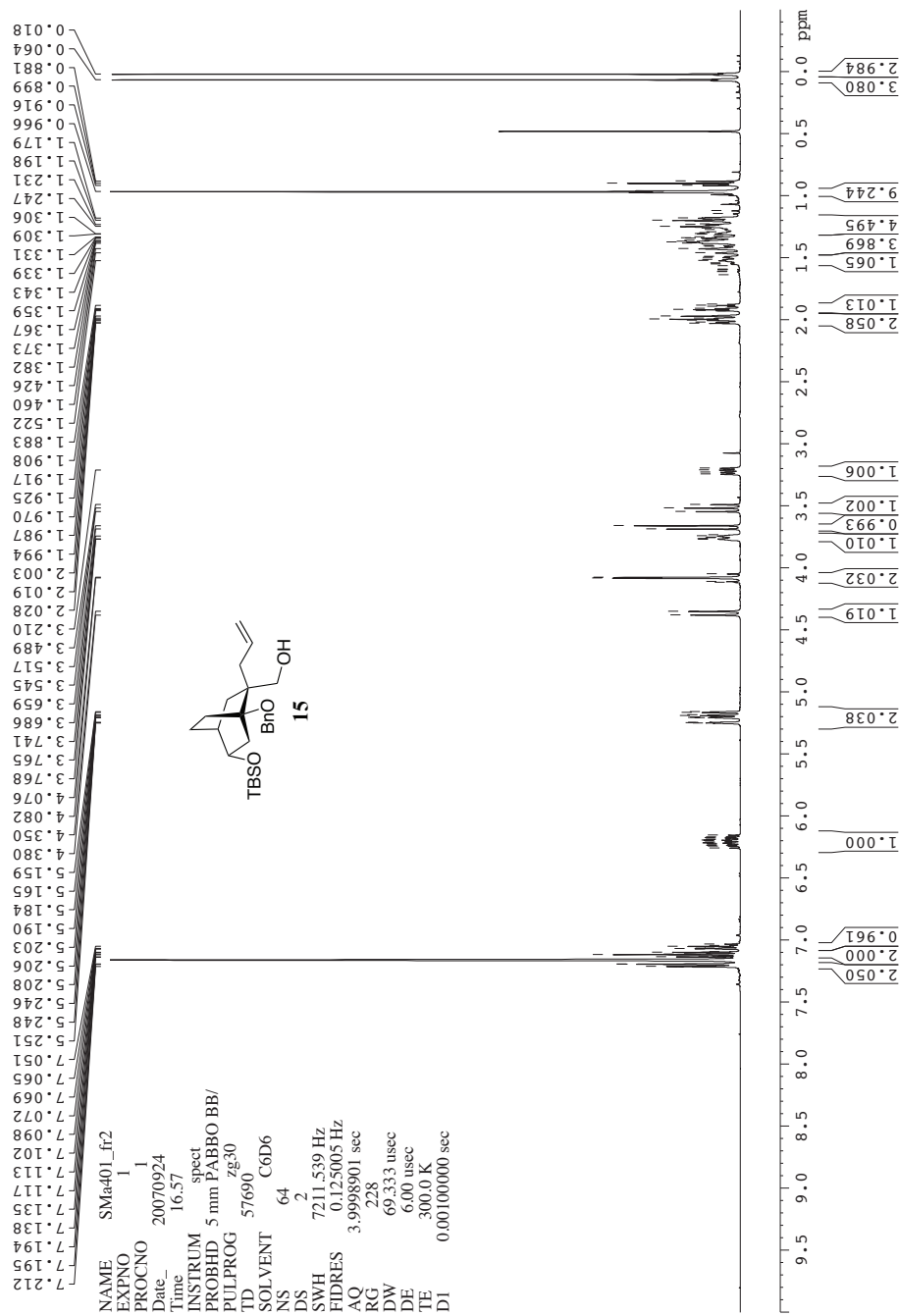
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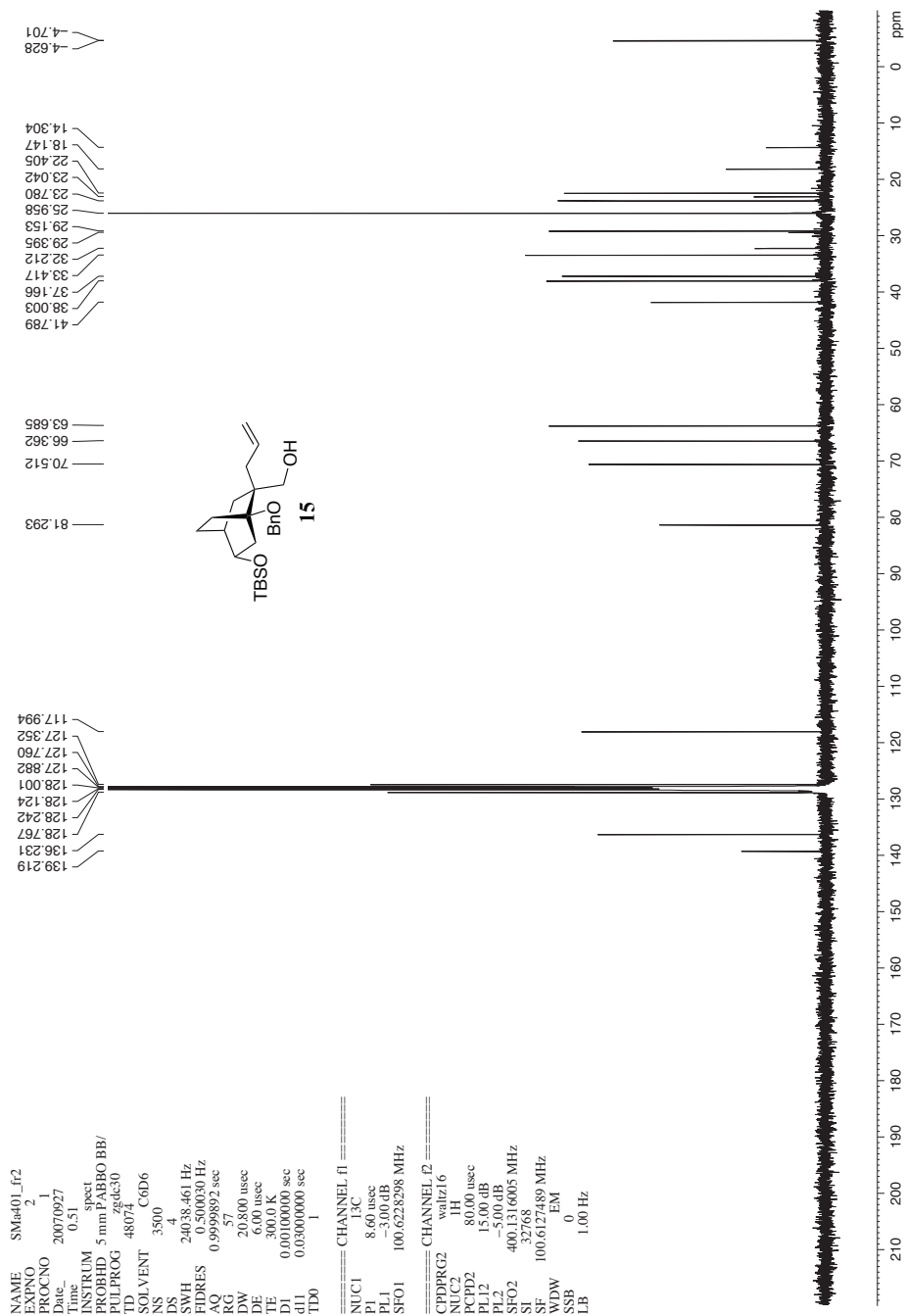
¹³C-NMR (±)-1-Benzyloxy-5-*endo*-(*tert*-dimethyl-silanyloxy)-bicyclo[2.2.2]octane-2-*endo*-carboxylic acid methyl ester (**12**)



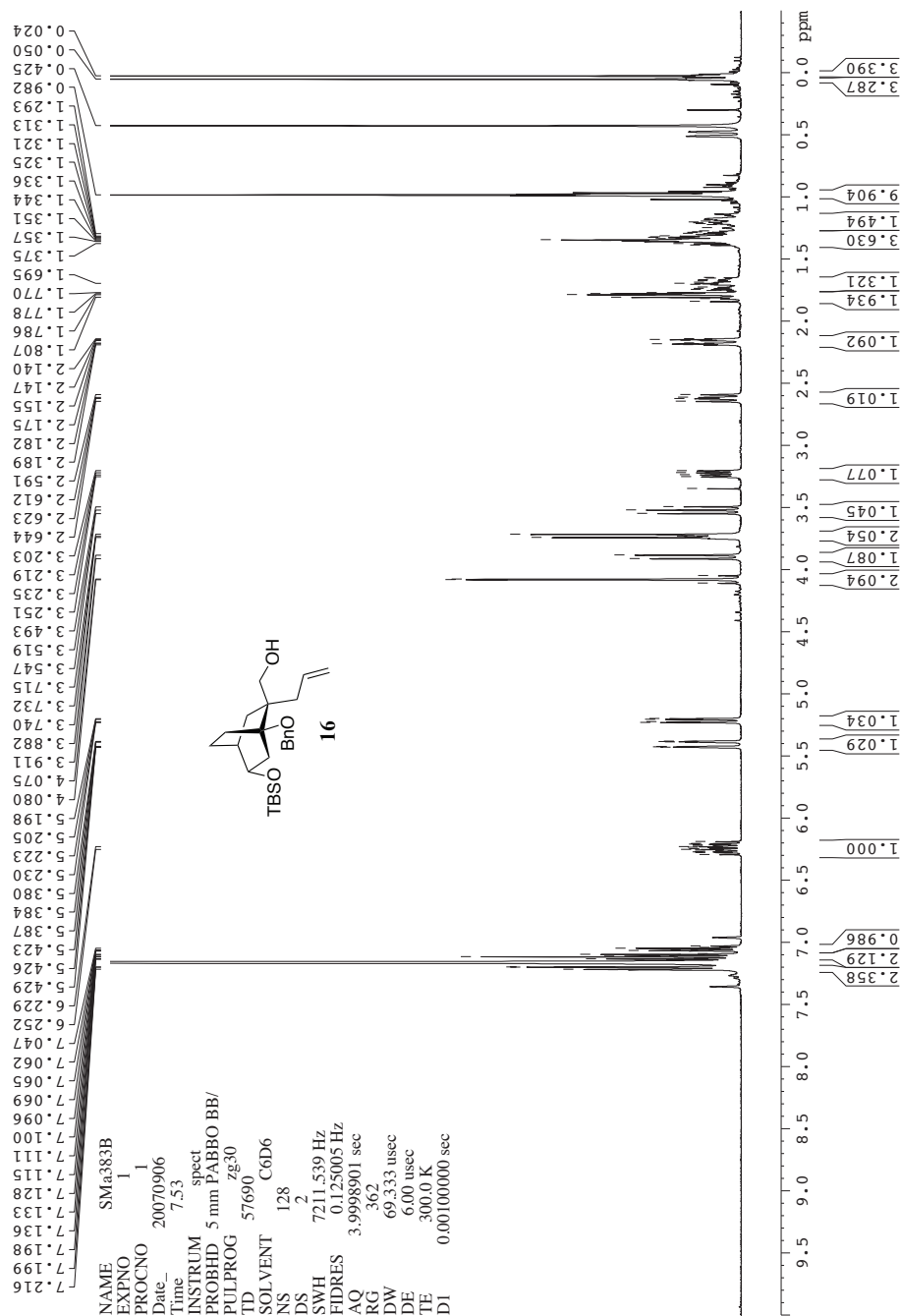
¹H-NMR (±)-[2-*exo*-Allyl-1-benzyloxy-5-*endo*-(*tert*-butyl-dimethyl-silanyloxy)-bicyclo[2.2.2] oct-2-yl]-methanol (**15**).



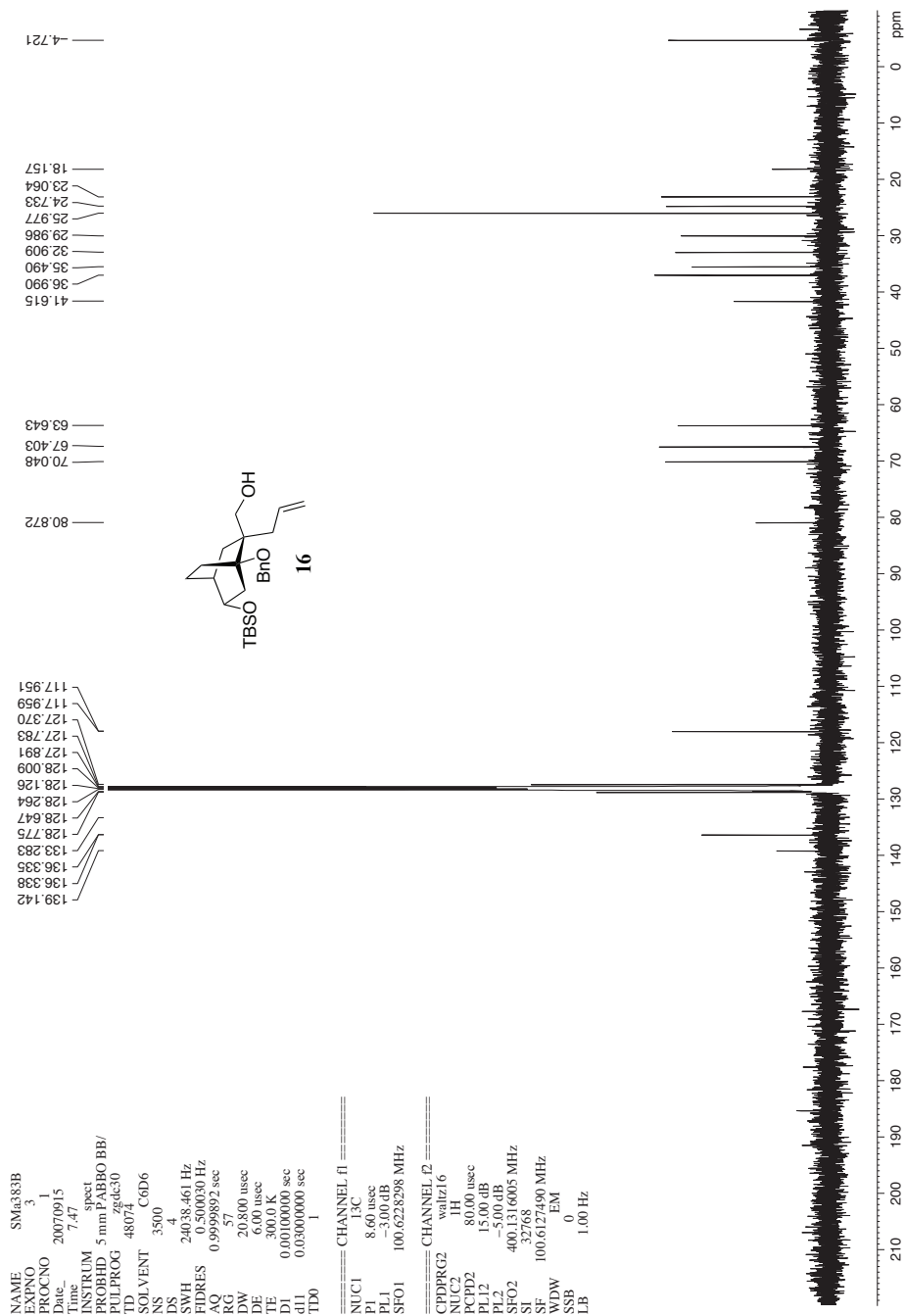
¹³C-NMR (±)-[2-*exo*-Allyl-1-benzyloxy-5-*endo*-(*tert*-butyl-dimethyl-silanyloxy)-bicyclo[2.2.2] oct-2-yl]-methanol (15**).**



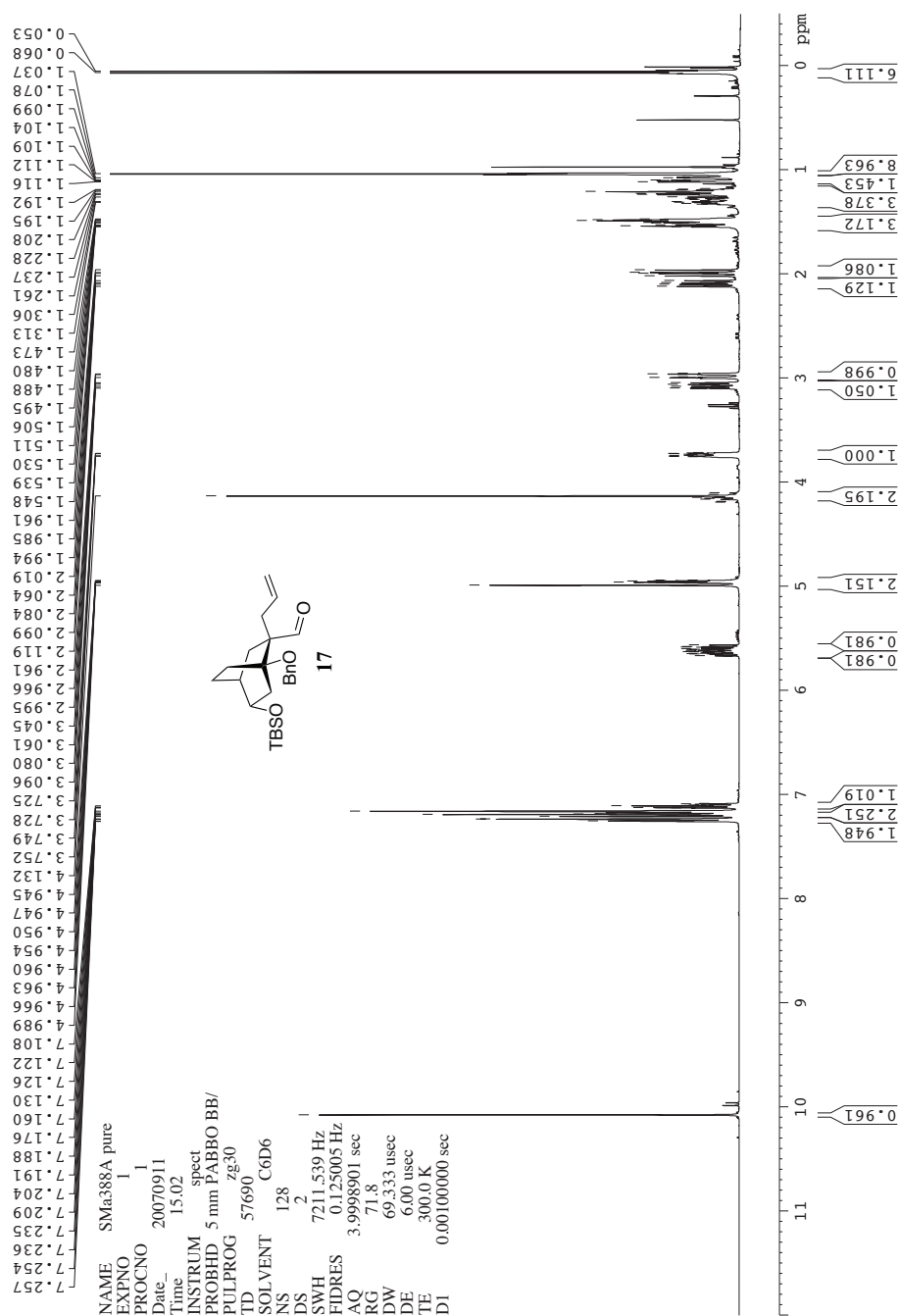
¹H-NMR (±)-[2-*endo*-Allyl-1-benzyloxy-5-*endo*-(*tert*-butyl-dimethyl-silanyloxy)-bicyclo[2.2.2] oct-2-yl]-methanol (**16**)



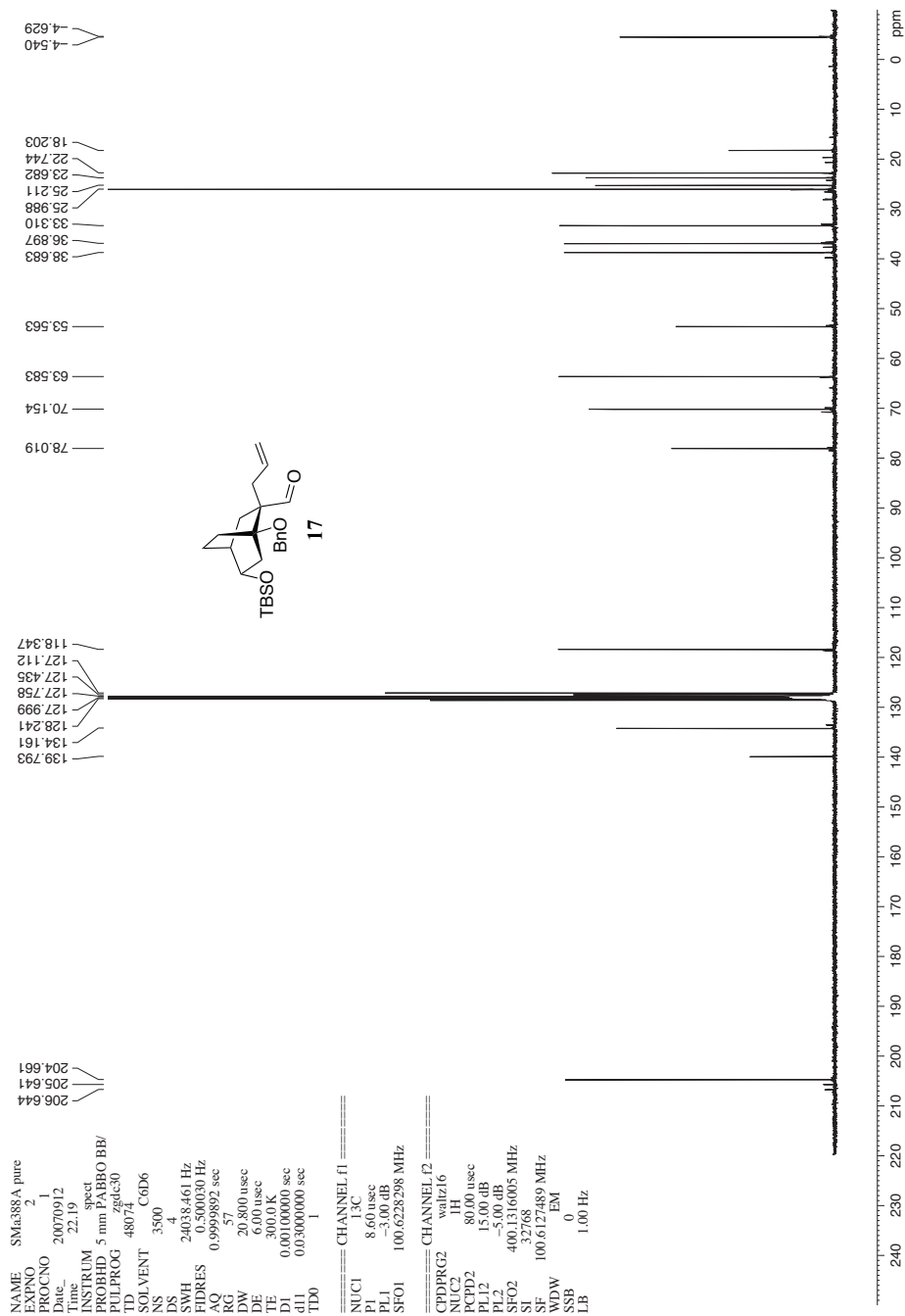
¹³C-NMR (±)-[2-*endo*-Allyl-1-benzyloxy-5-*endo*-(*tert*-butyl-dimethyl-silanyloxy)-bicyclo[2.2.2] oct-2-yl]-methanol (16)



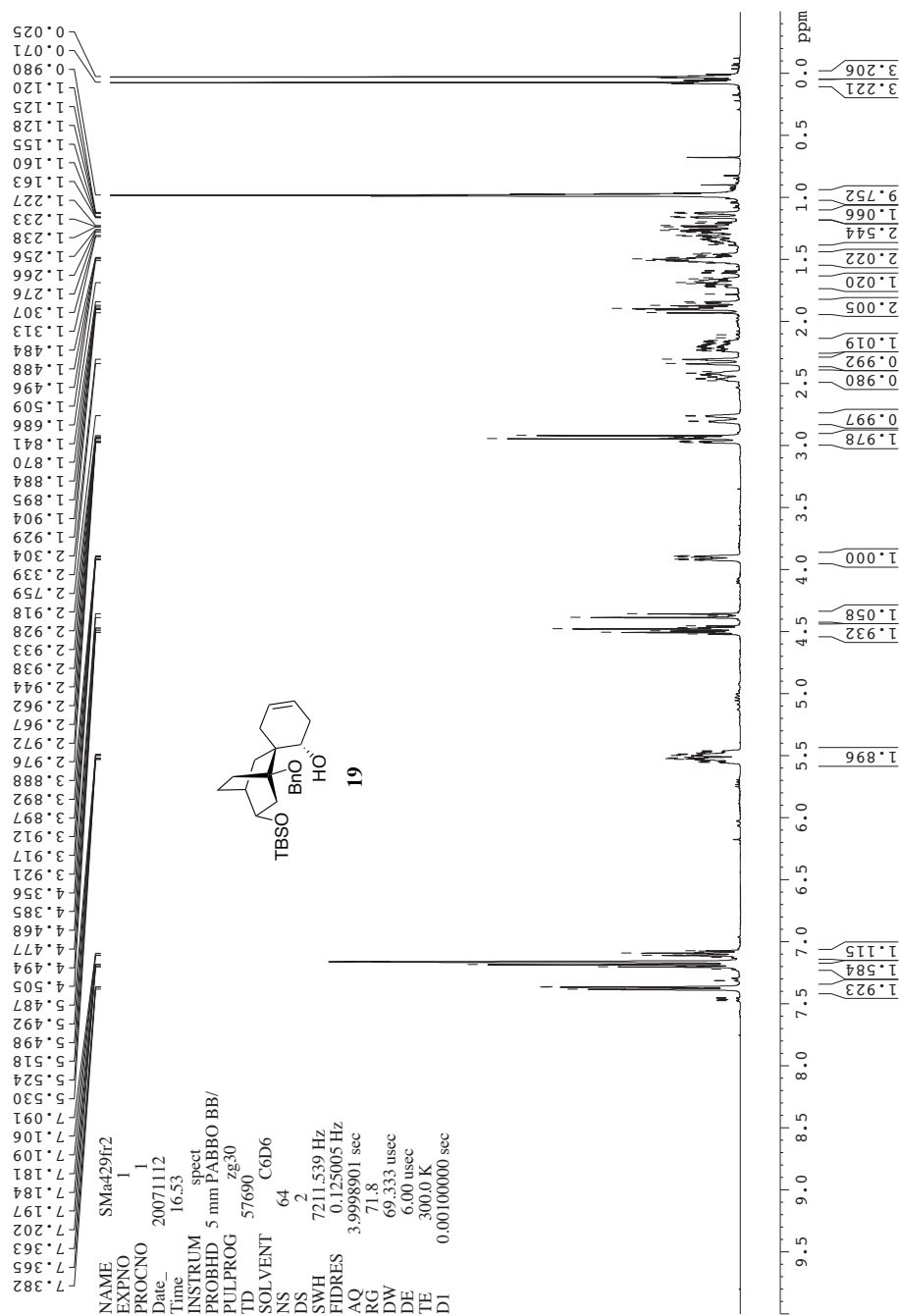
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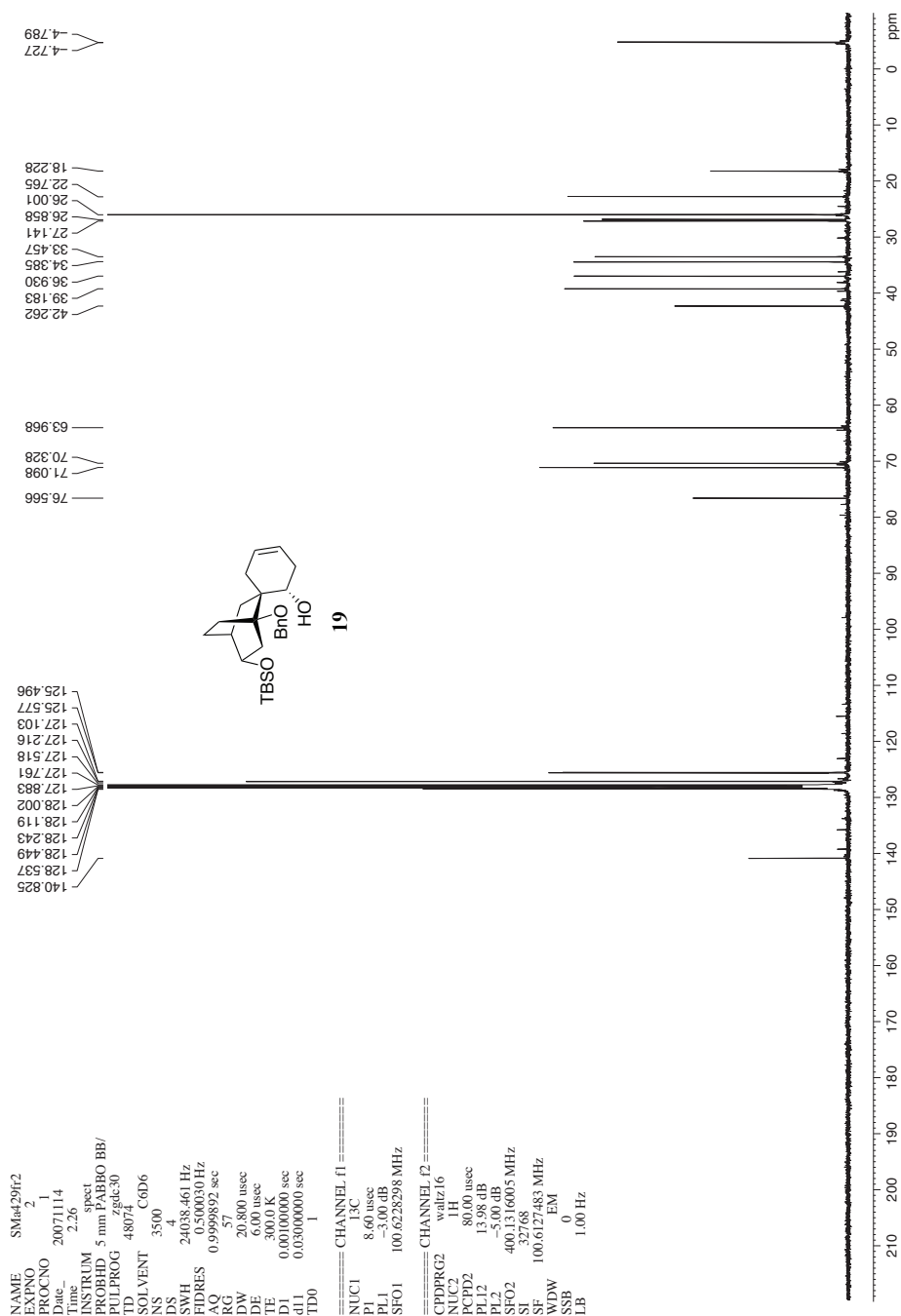
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[bicyclo[2.2.2]-octane-2,1'-cyclohex-3'-en]-6'-ol (**19**)**

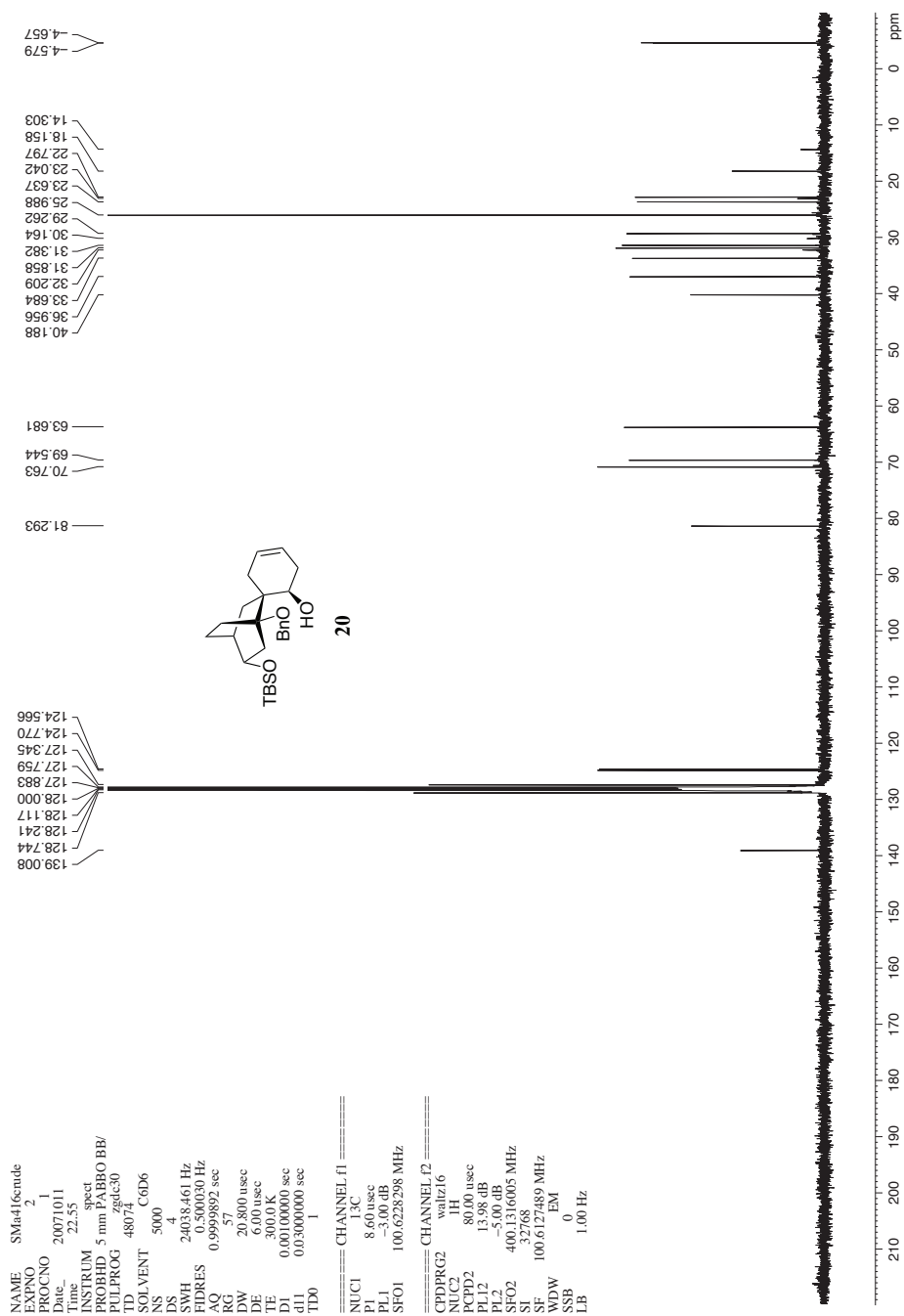


¹³C-NMR (±)-(6'S*)-1-Benzoyloxy-5-[*endo-tert*-butyl-dimethylsilyloxy]-spiro[bicyclo[2.2.2]-octane-2,1'-cyclohex-3'-en]-6'-ol (19)



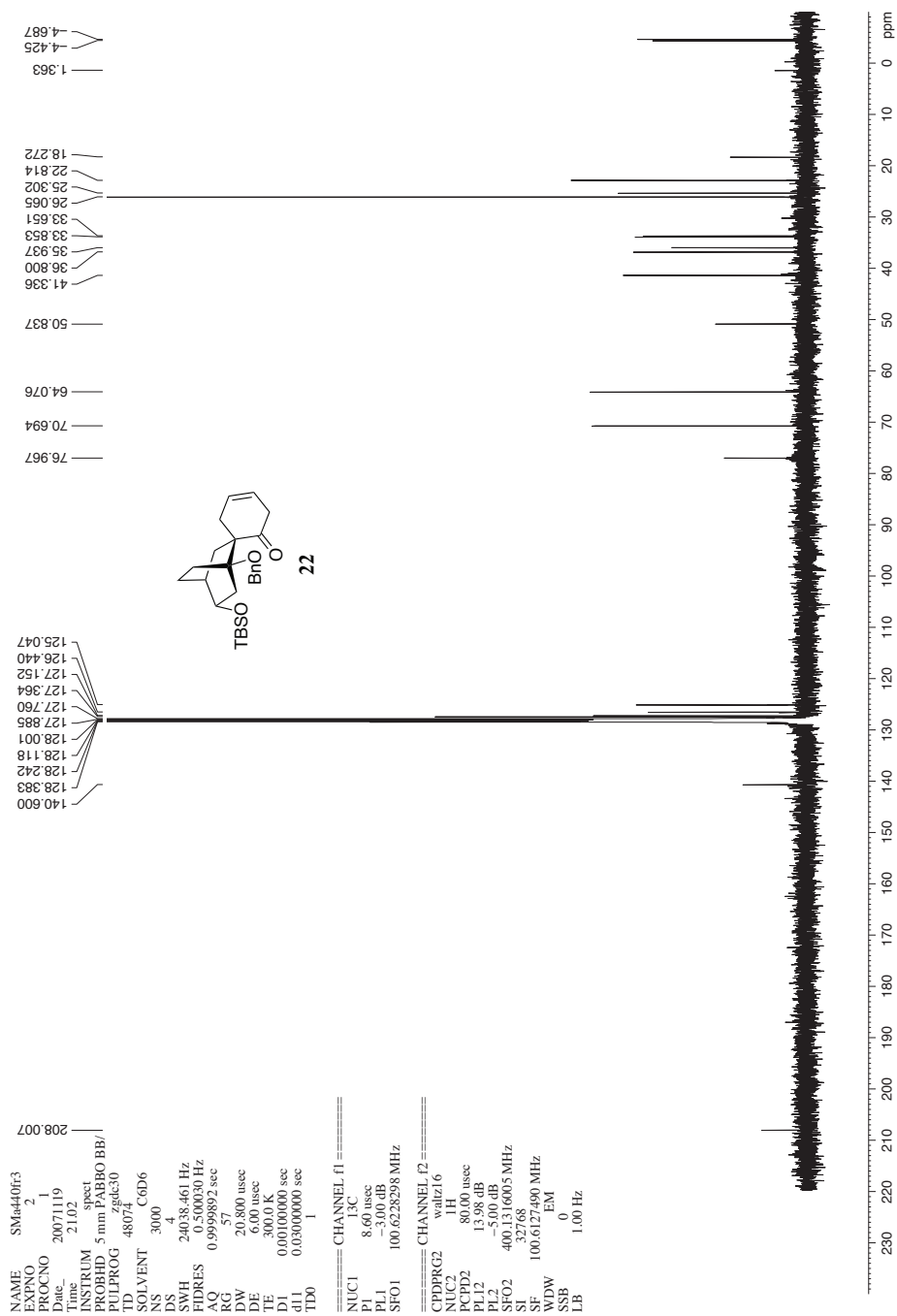


¹³C-NMR (±)-(6'*R)-1-Benzzyloxy-5-[*endo-tert*-butyl-dimethylsilyloxy]-
spiro[bicyclo[2.2.2]octane-2,1'-cyclohex-3'-en]-6'-ol (**20**)**

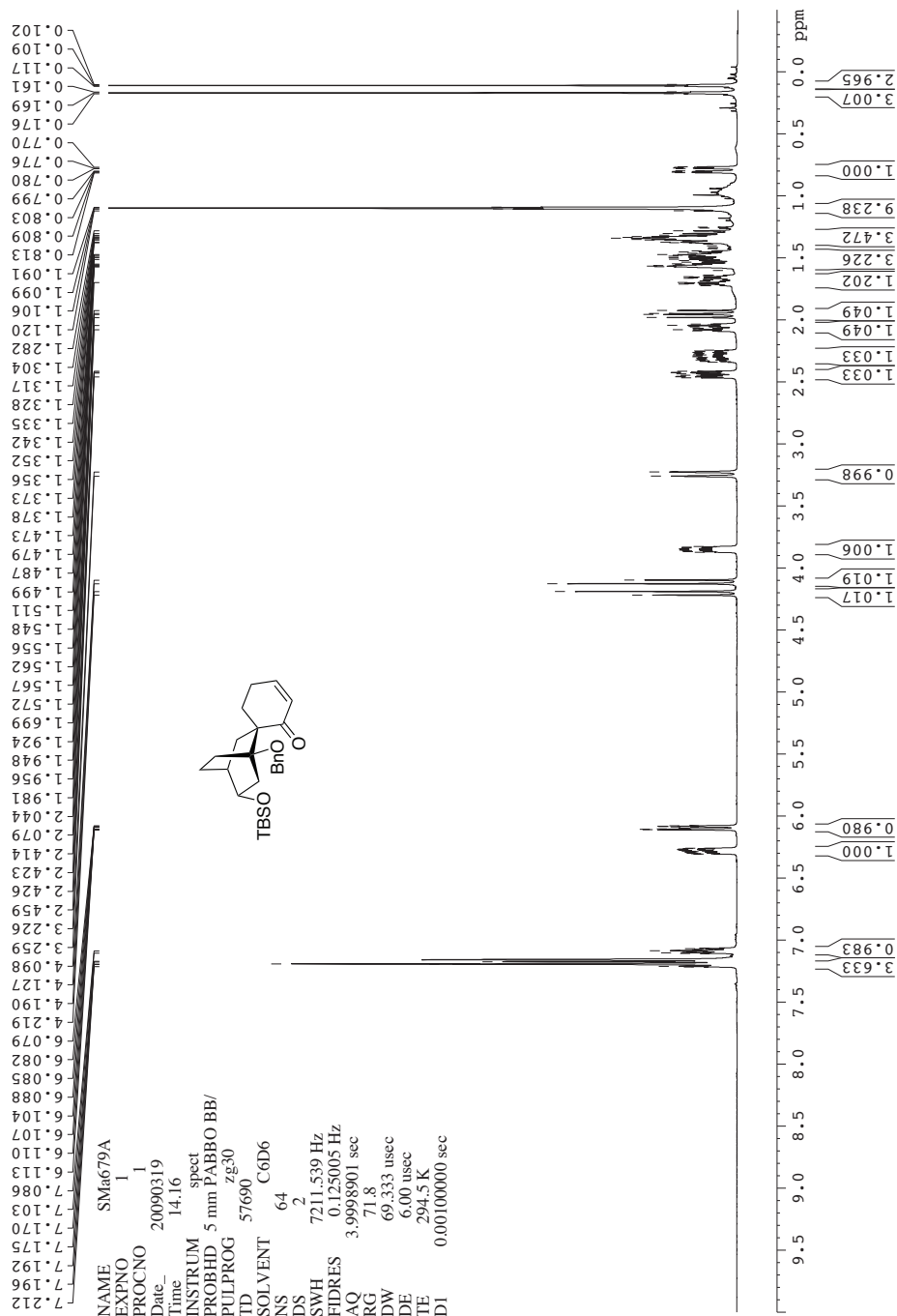




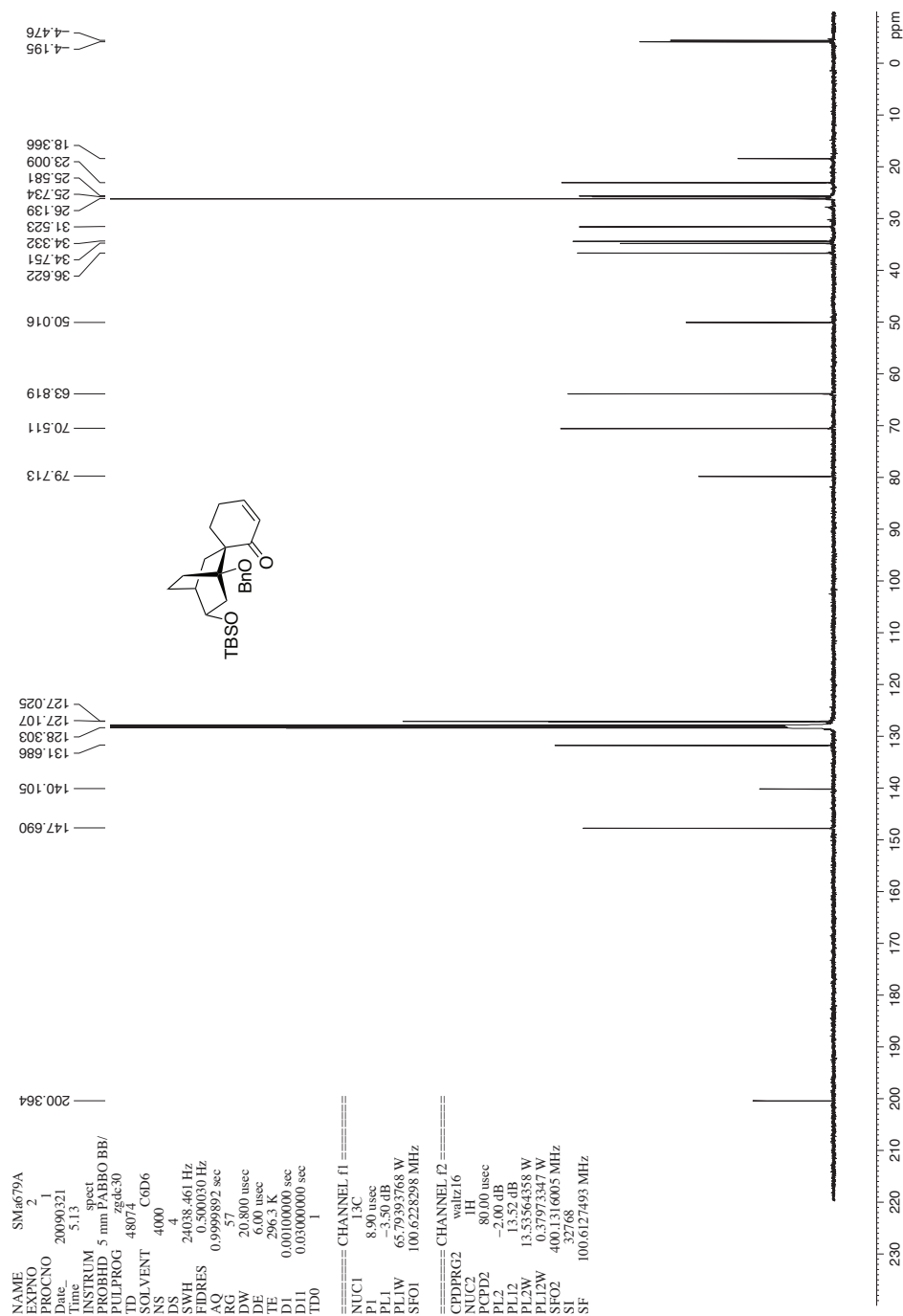
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**¹H-NMR (±)-1-Benzyloxy-5-[*endo-tert*-butyl-dimethylsilyloxy]-
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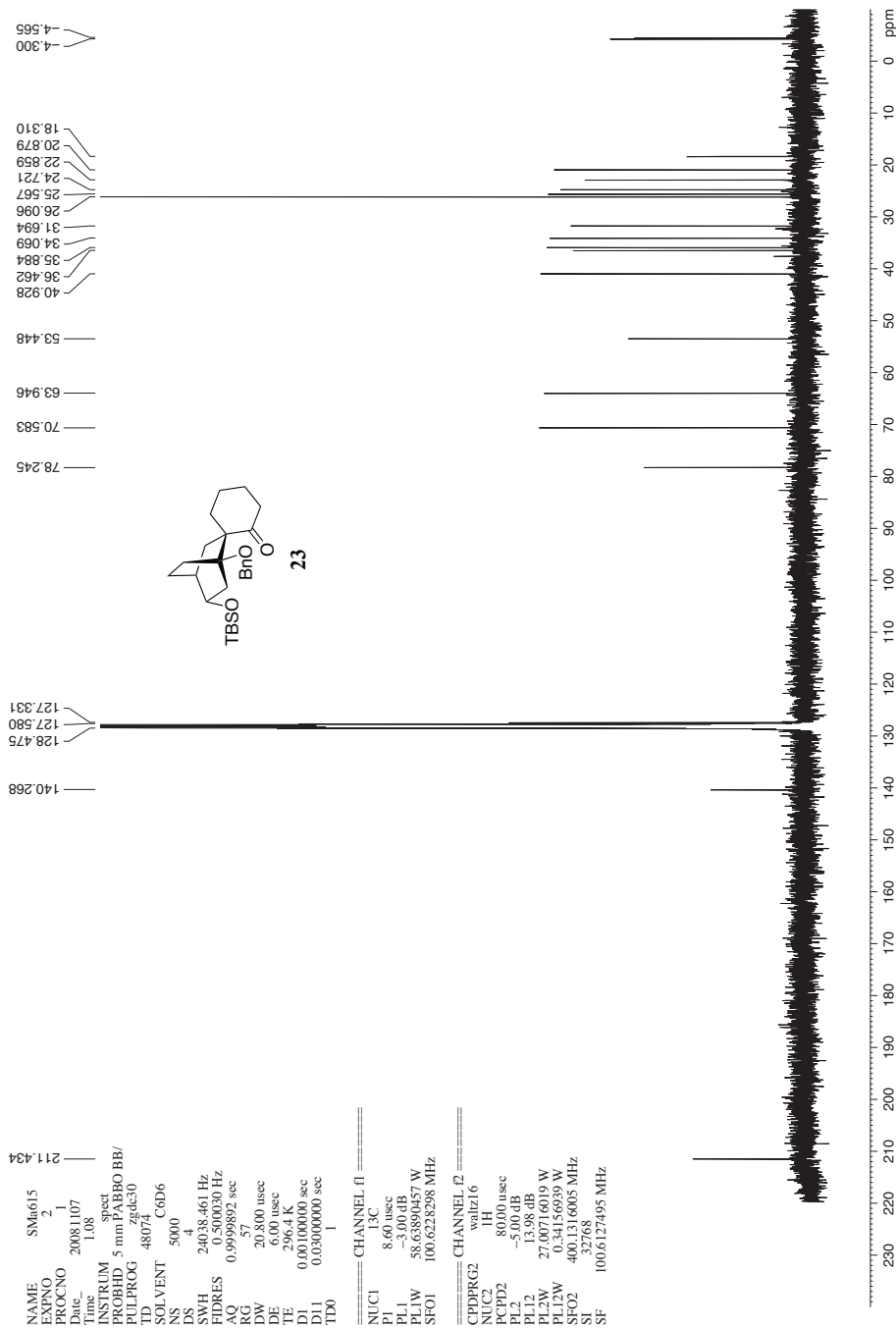


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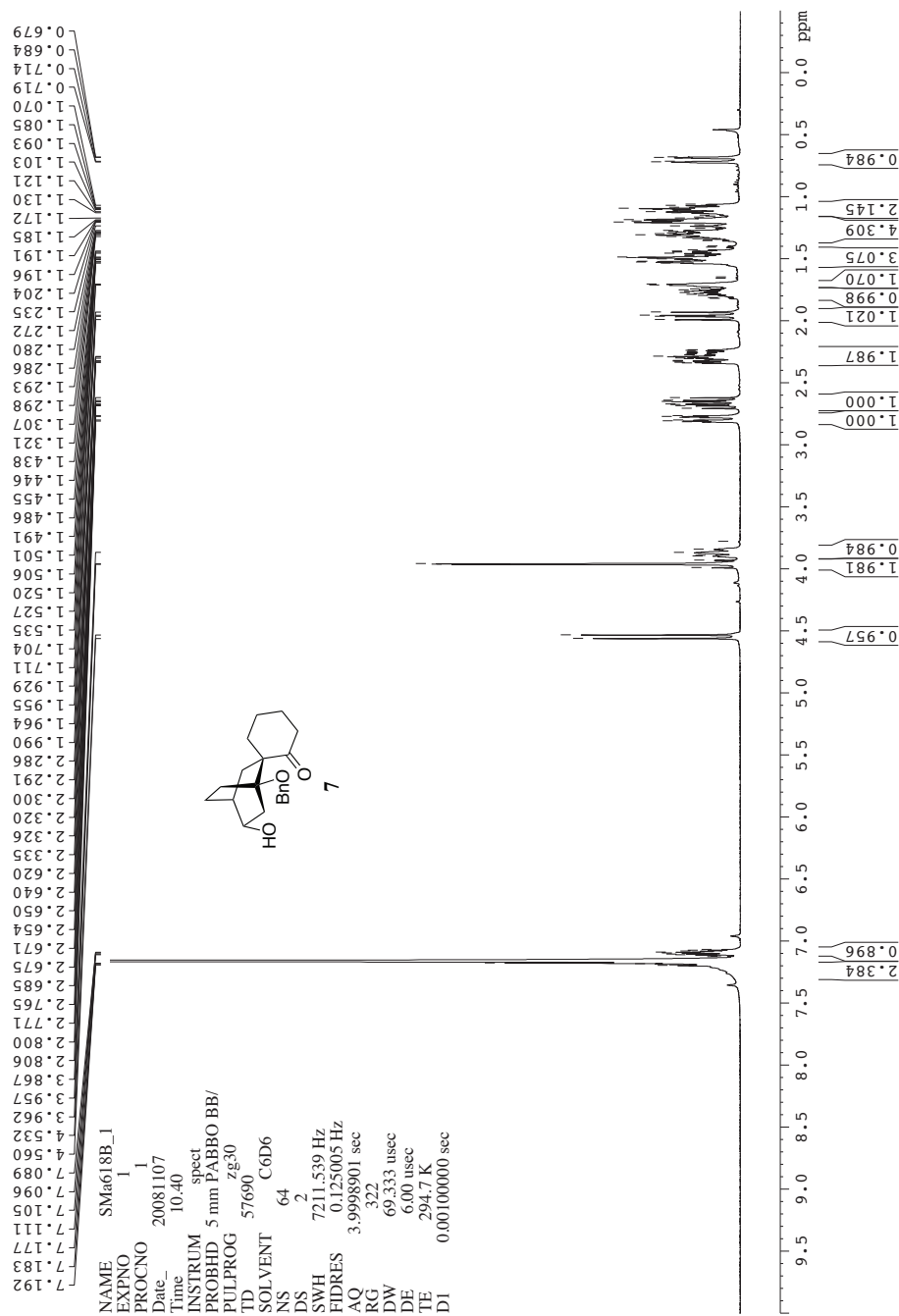




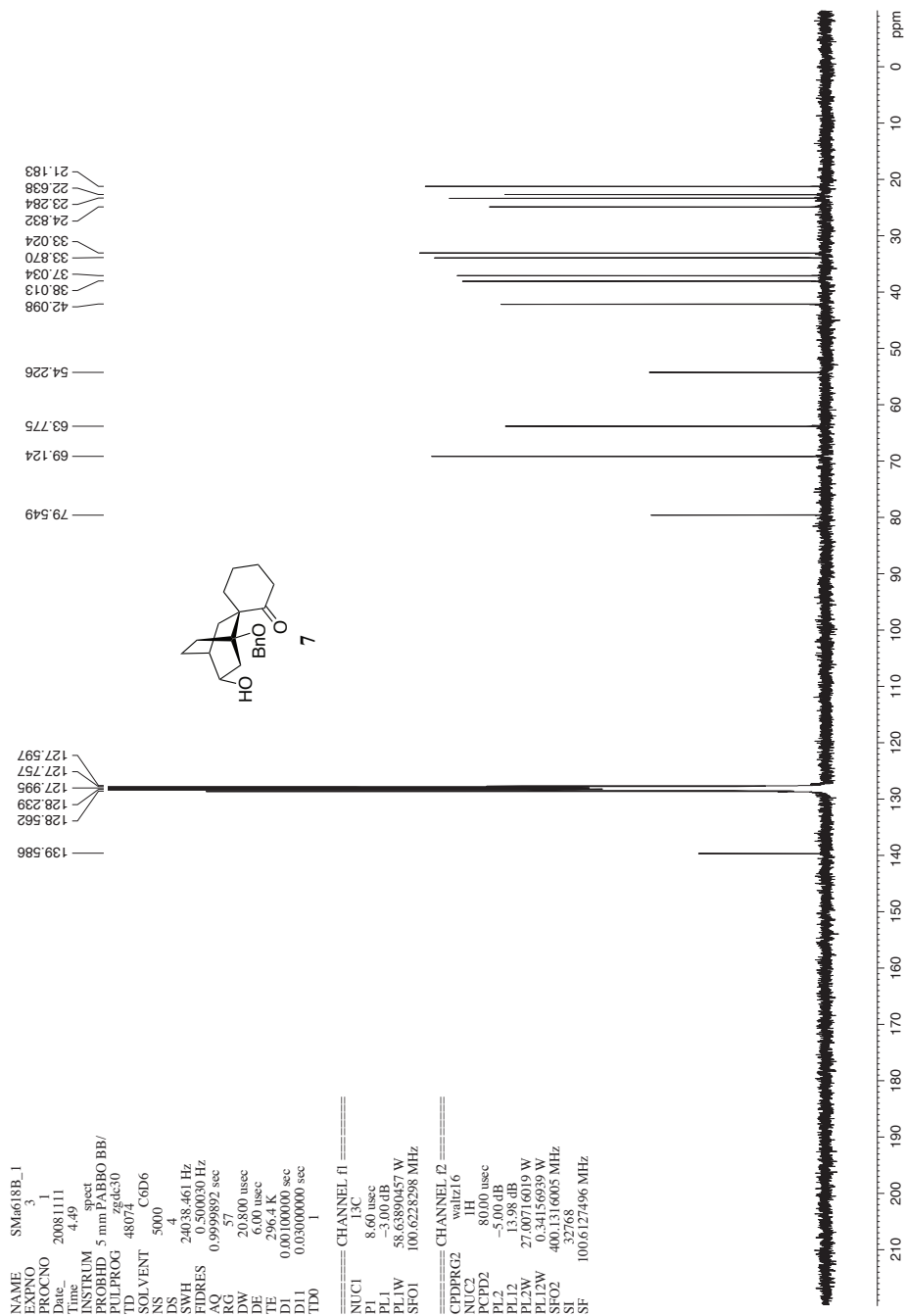
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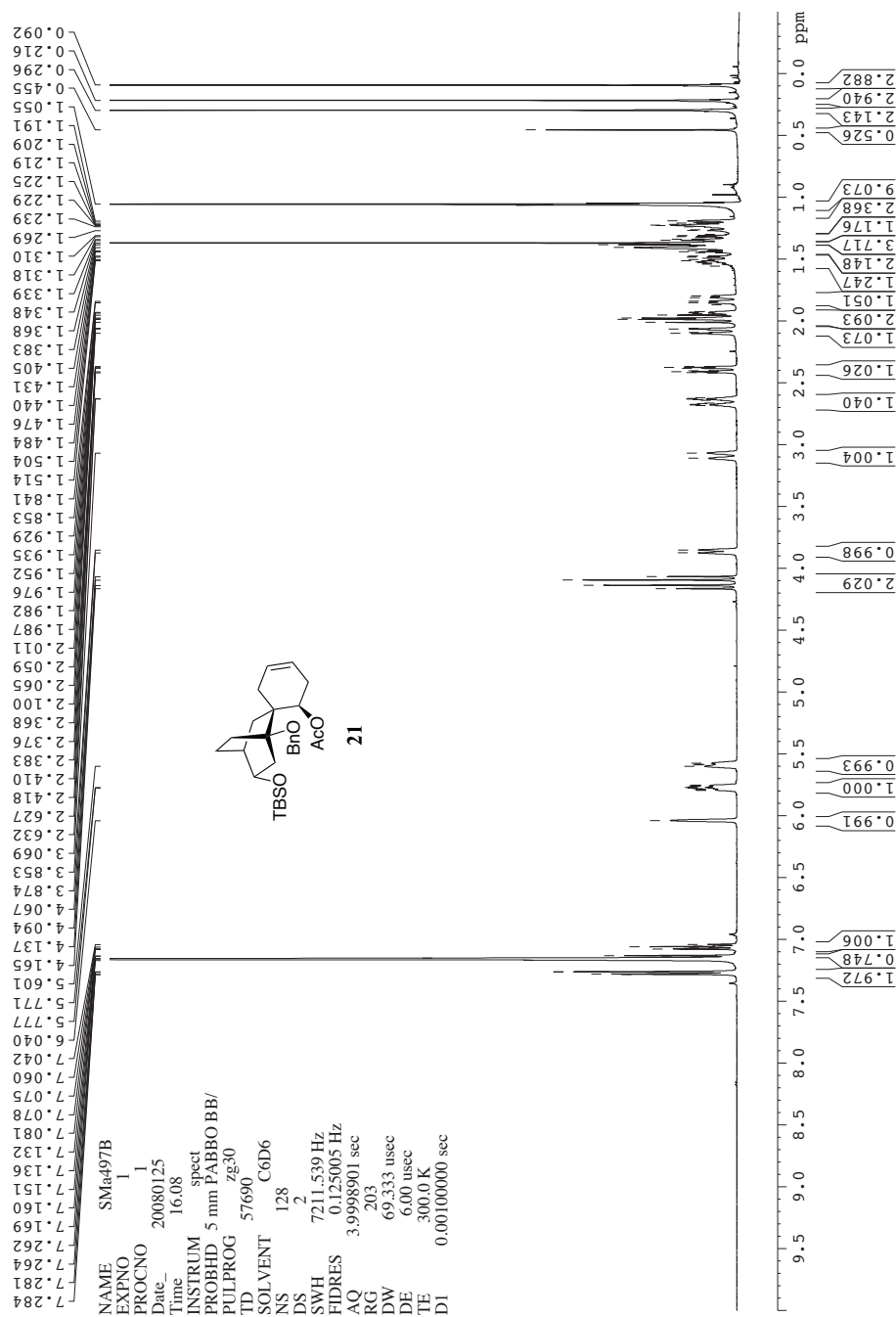
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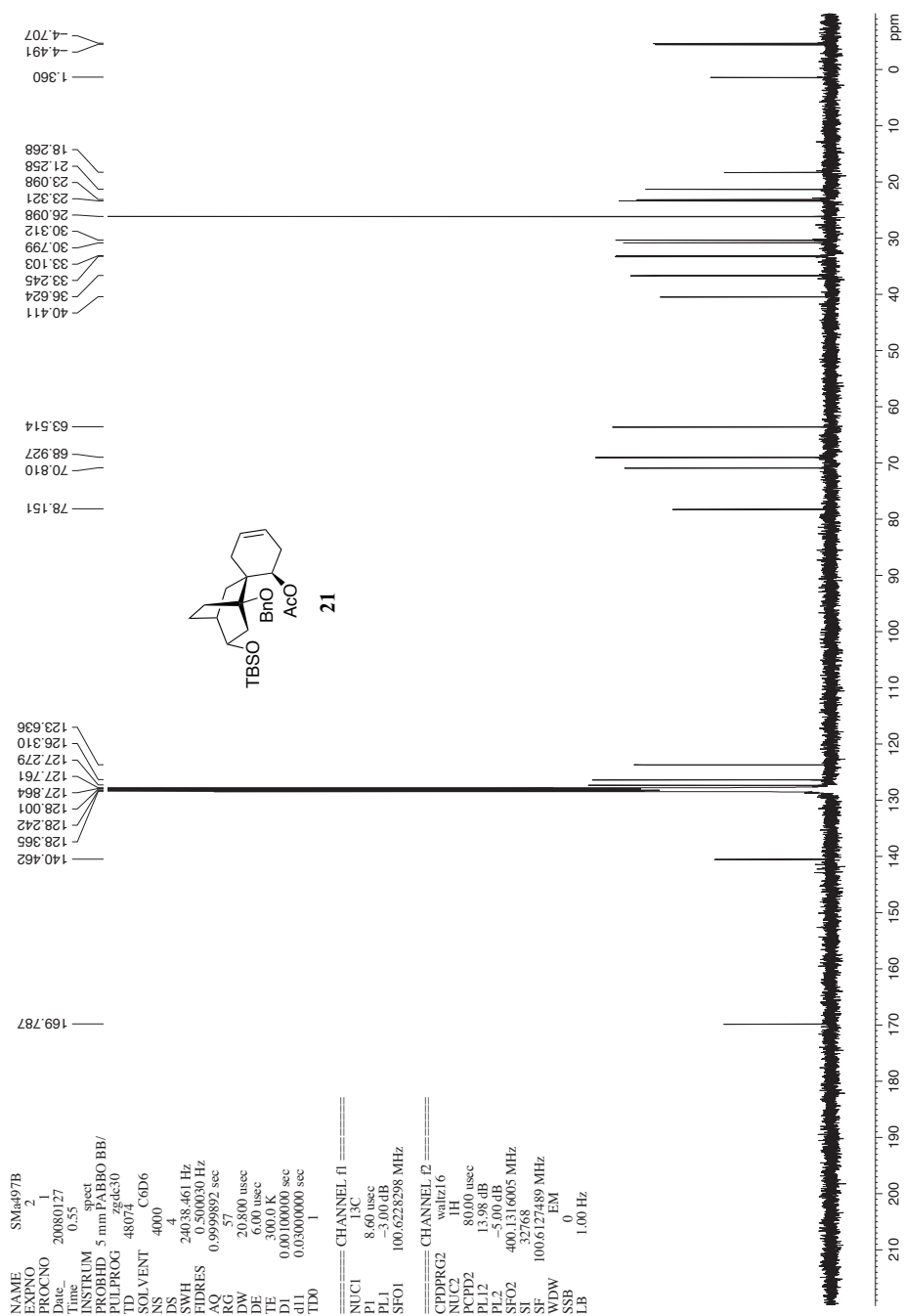
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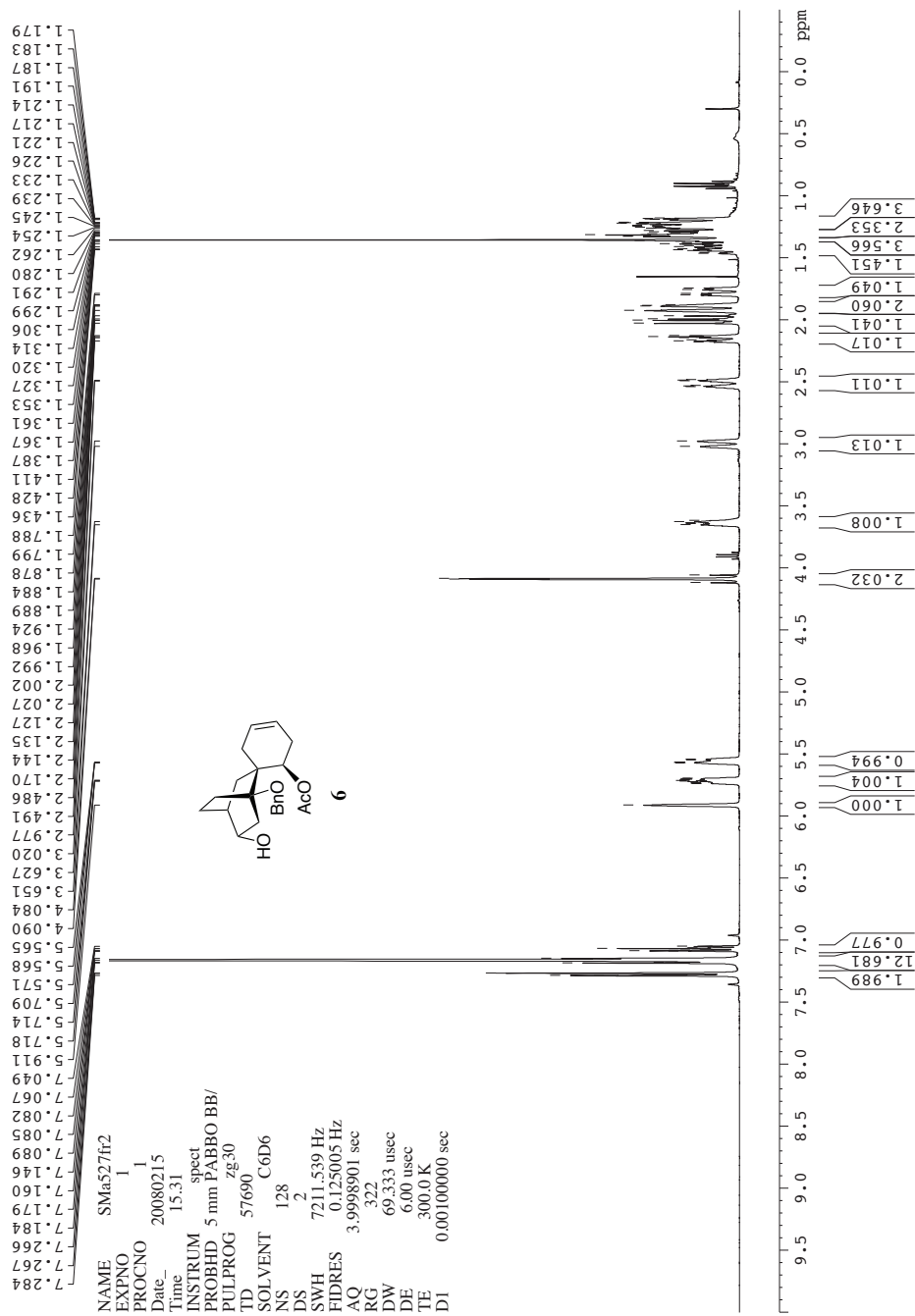
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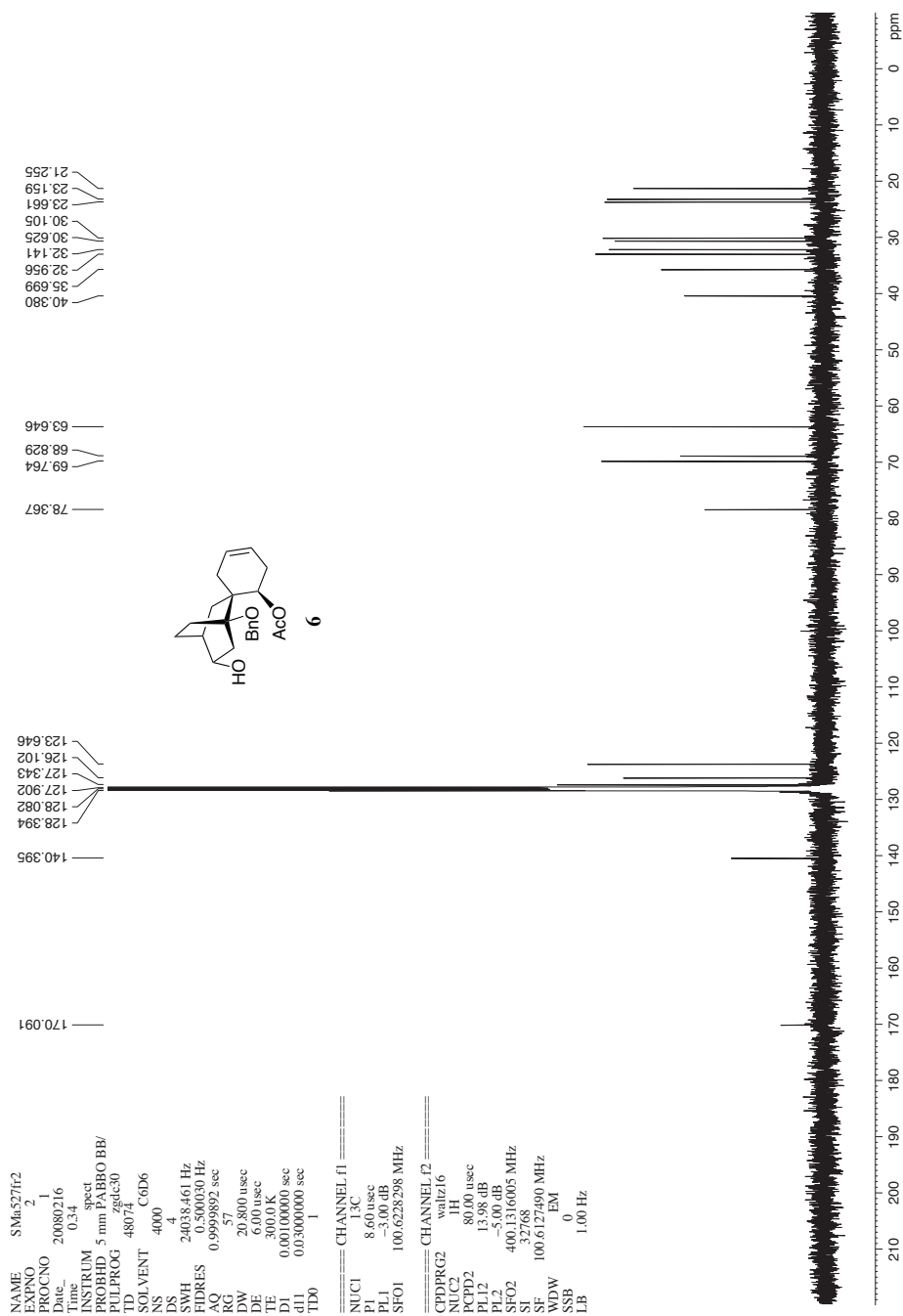
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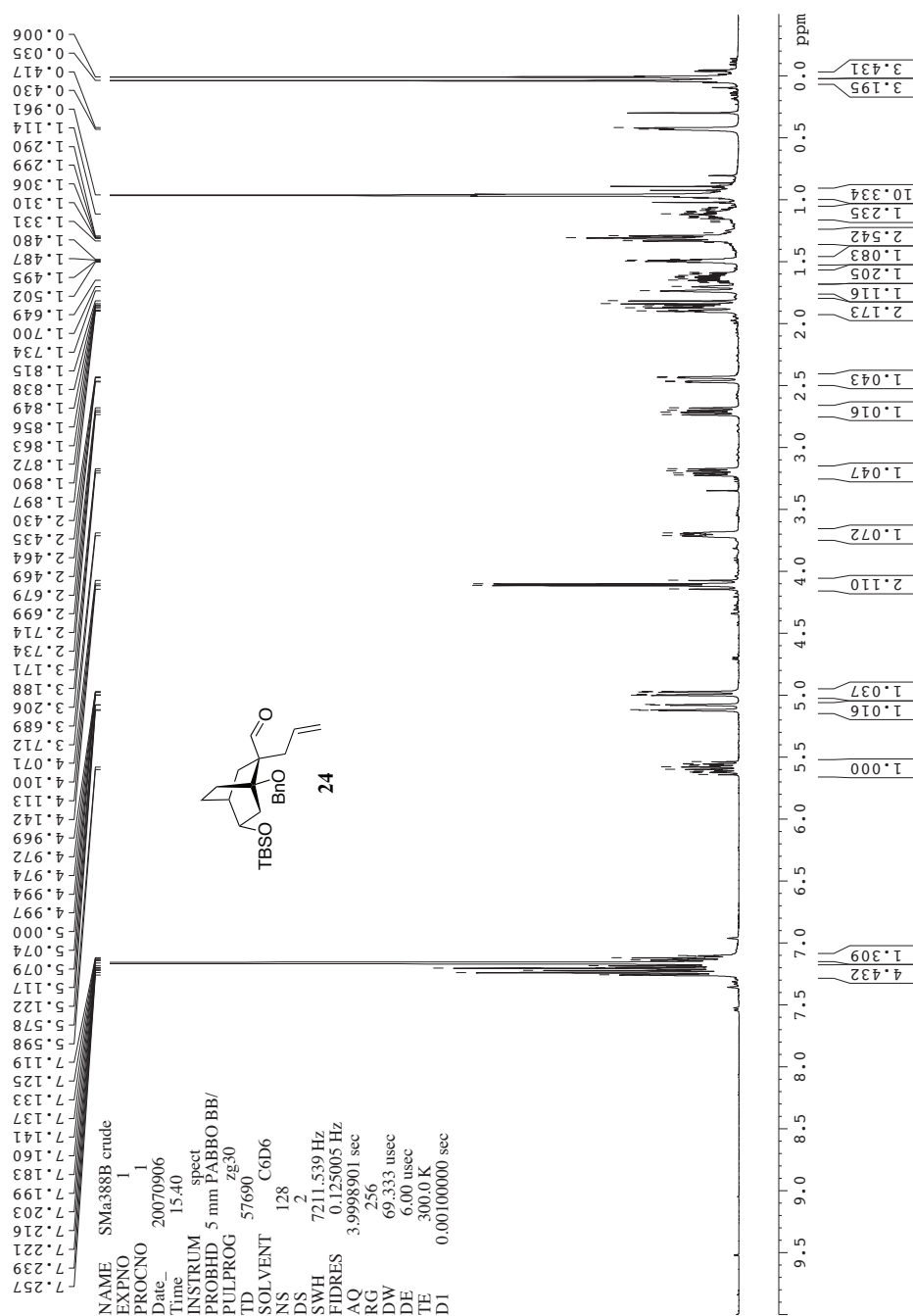
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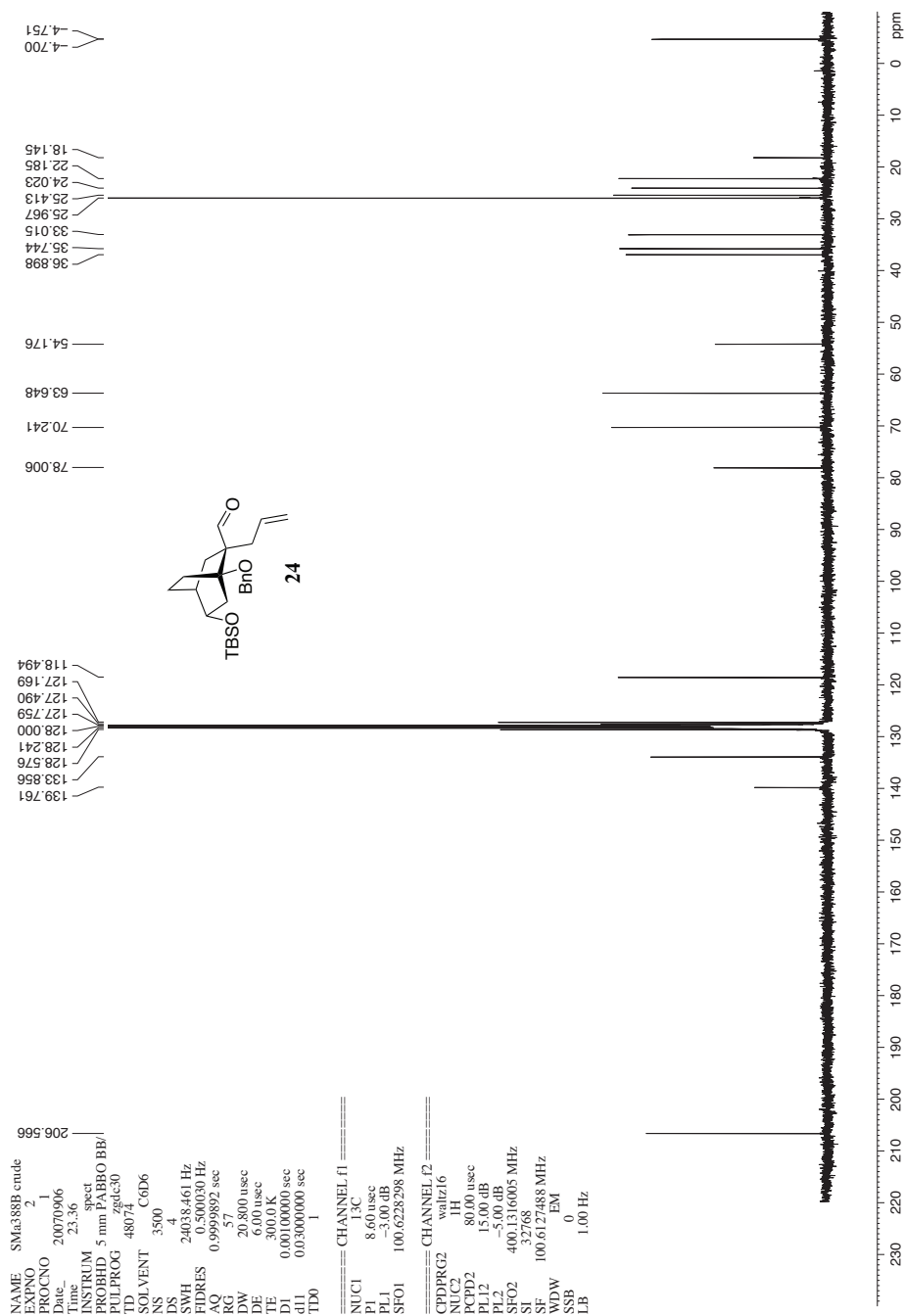
¹³C-NMR (±)-(6'*R)-1-Benzzyloxy-5-*endo*-hydroxy-spiro[bicyclo[2.2.2]octane-2,1'-cyclohex-3'-en]-6'-acetate (6).**



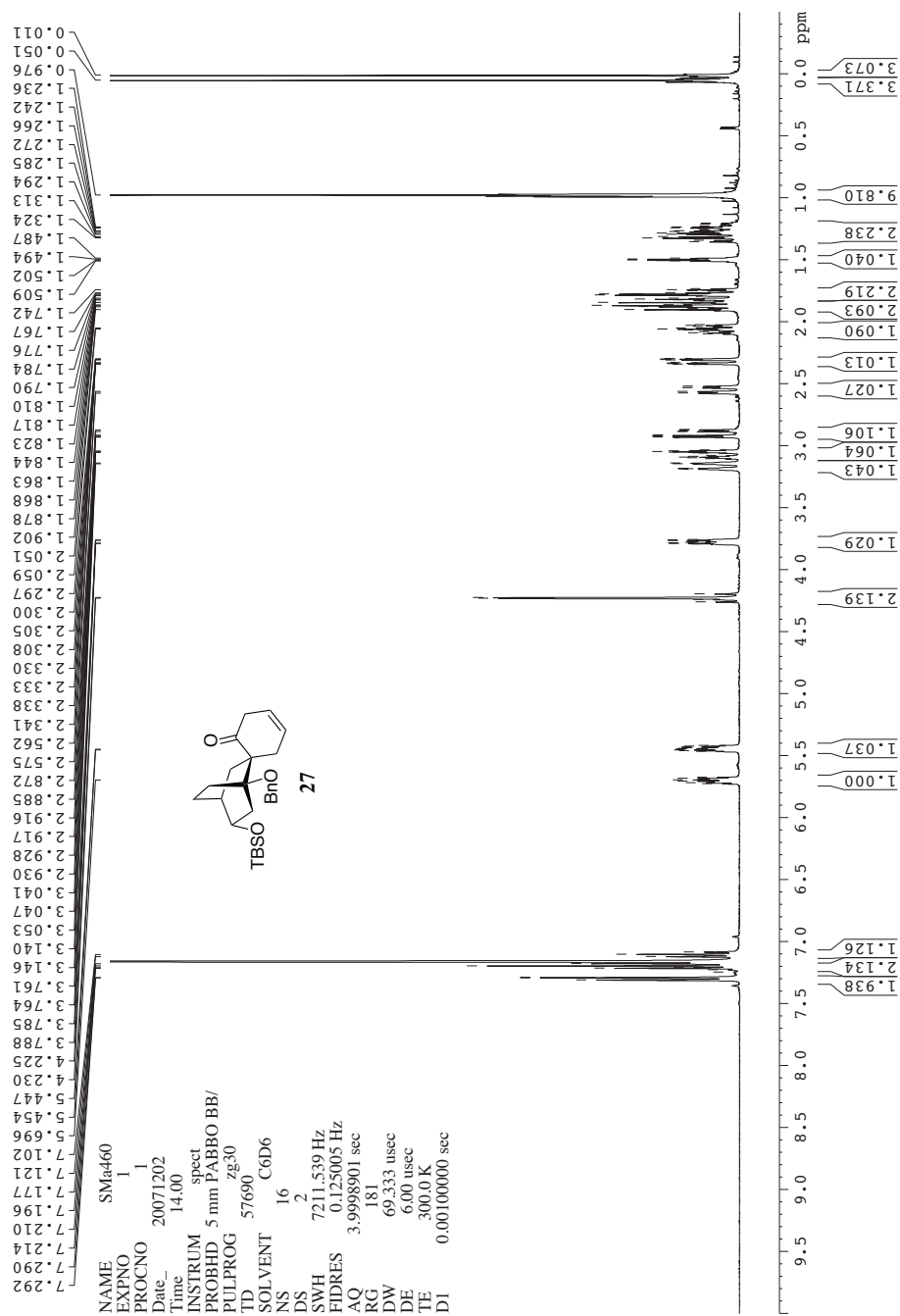
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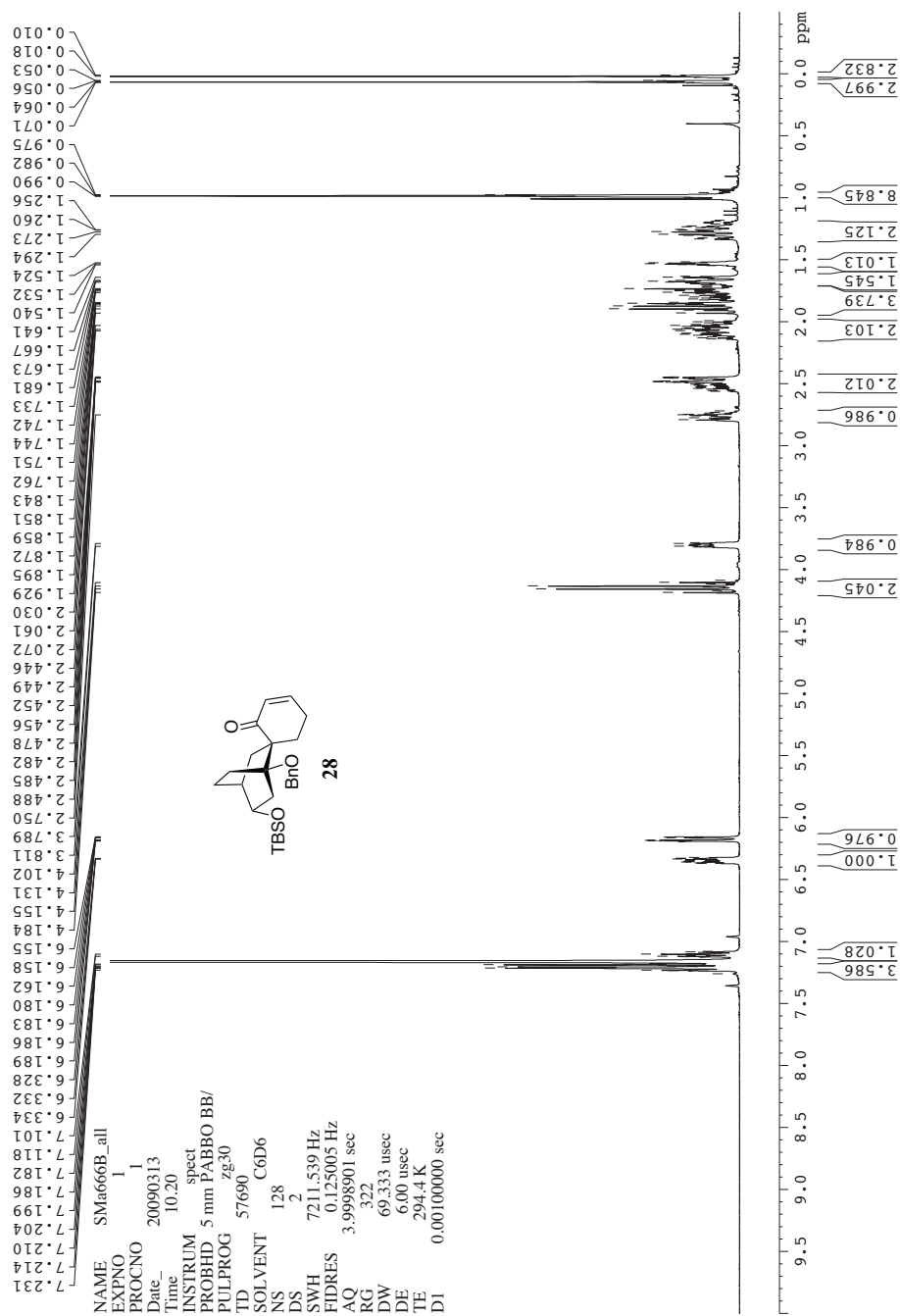


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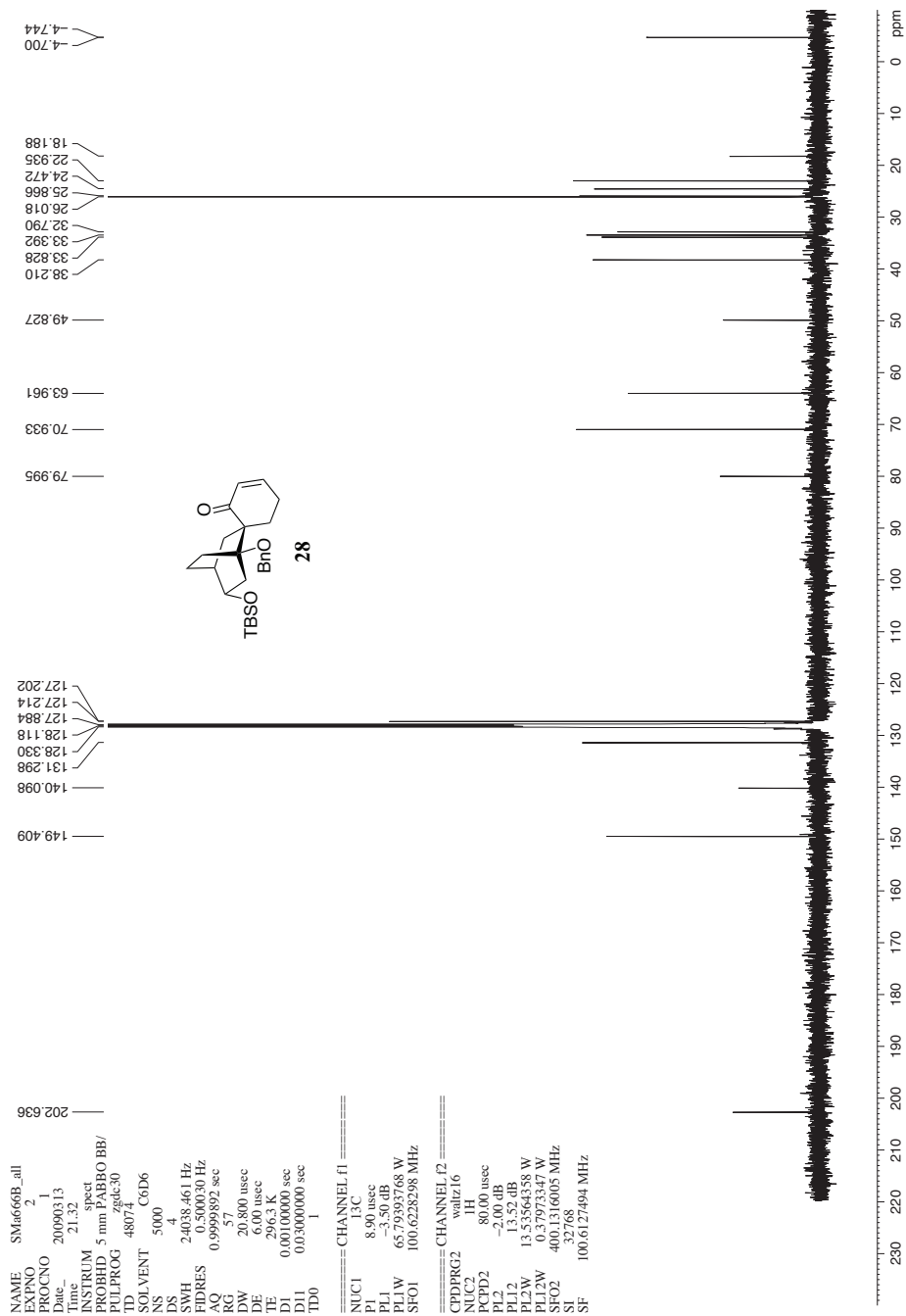




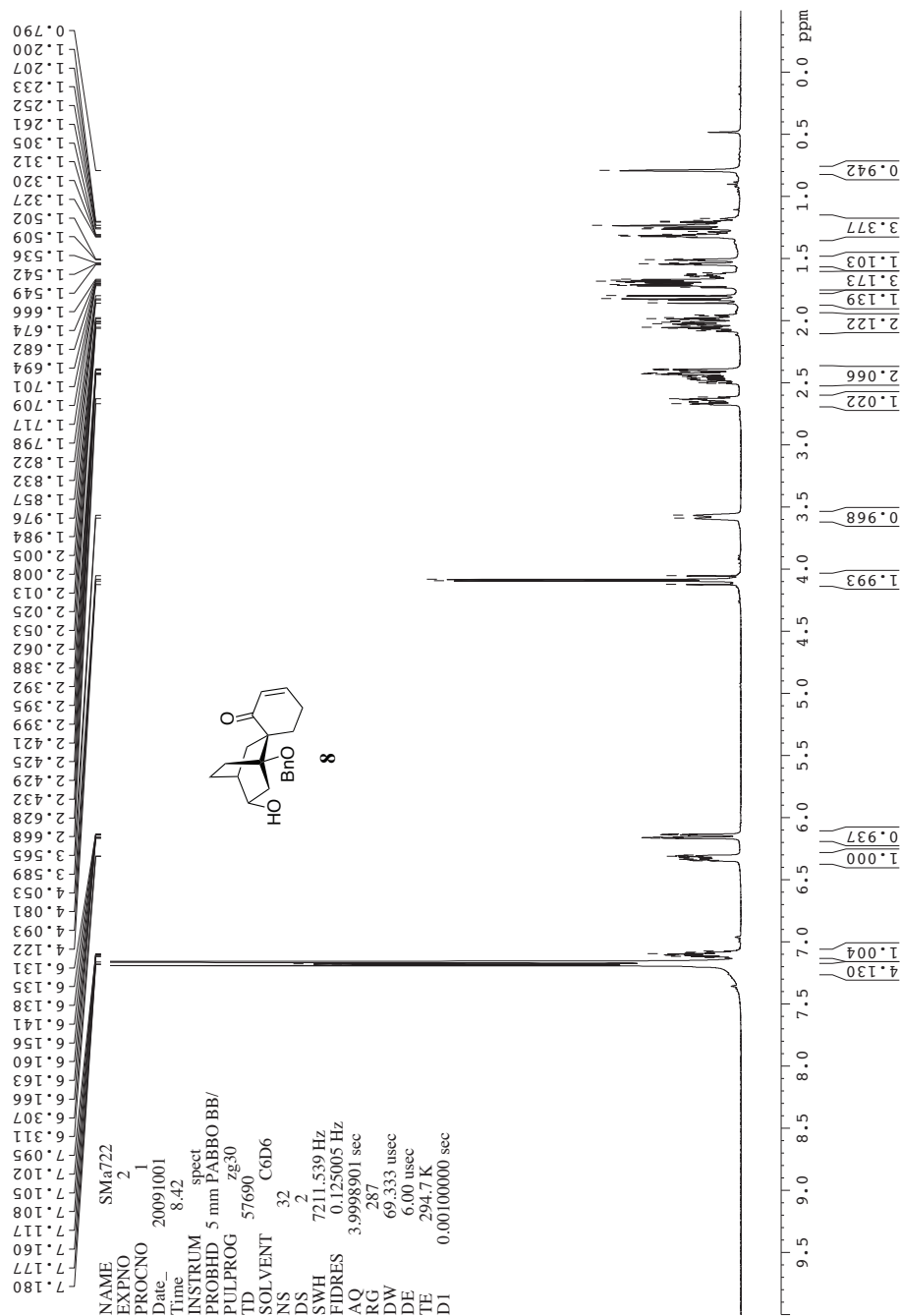
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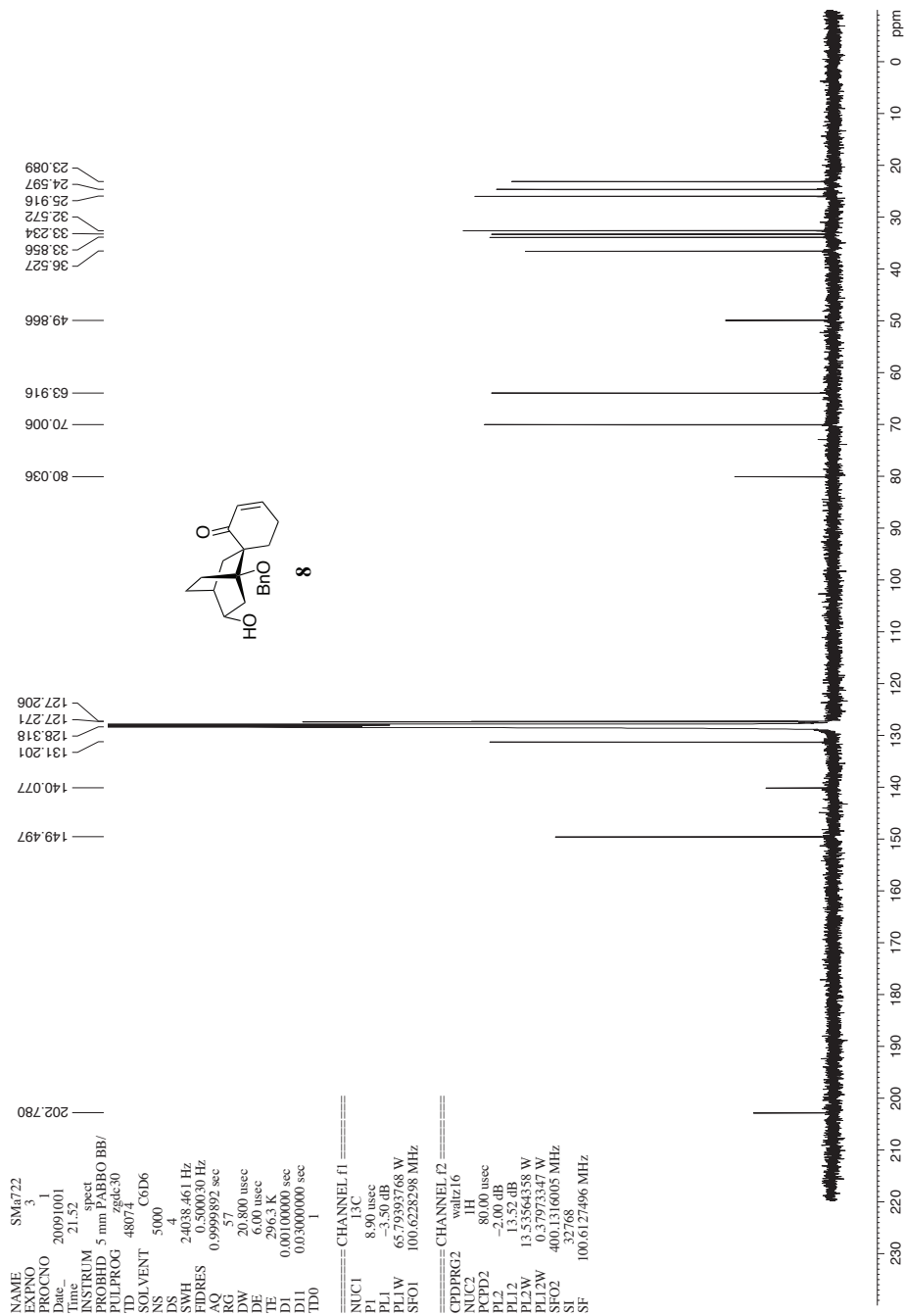
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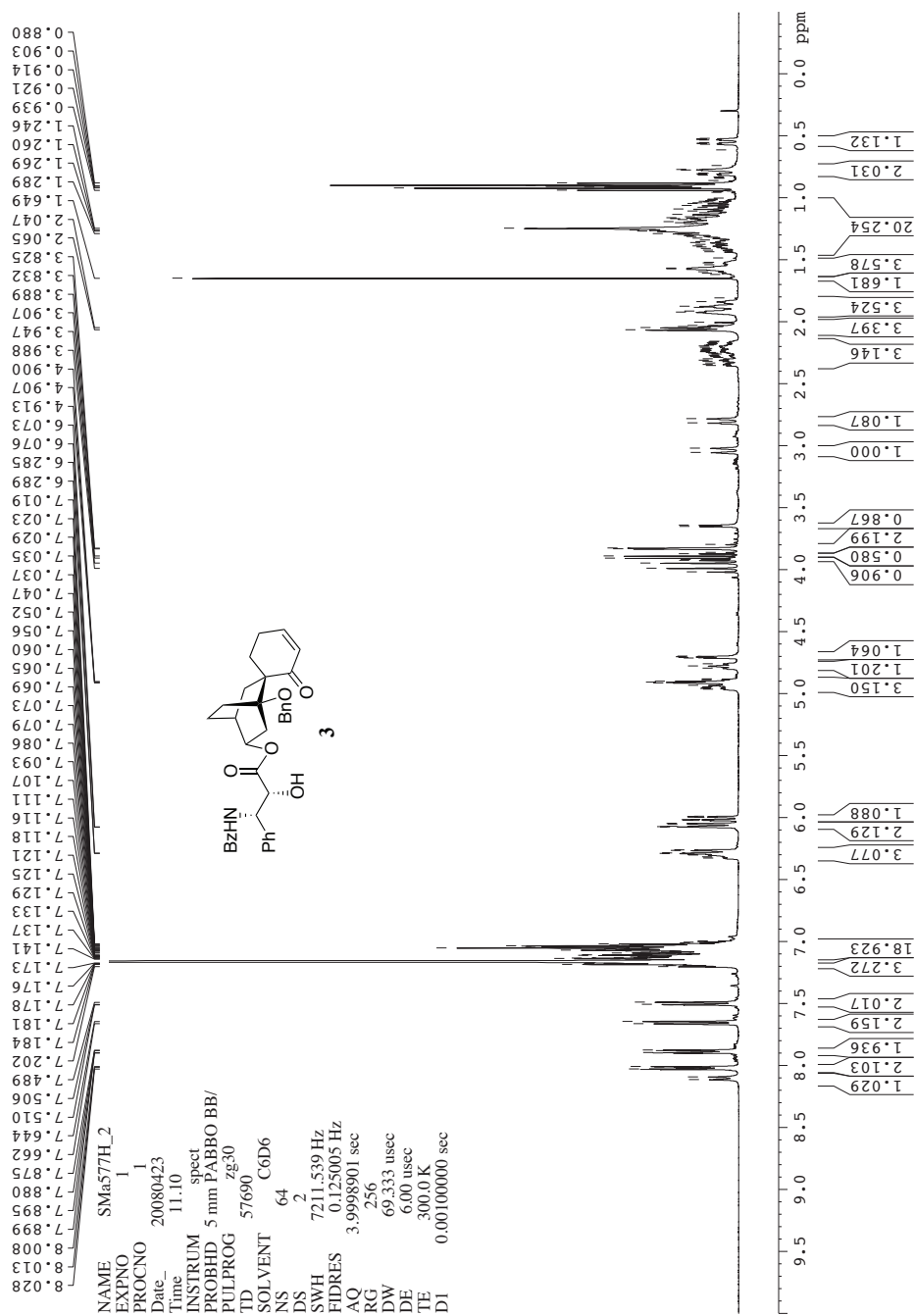
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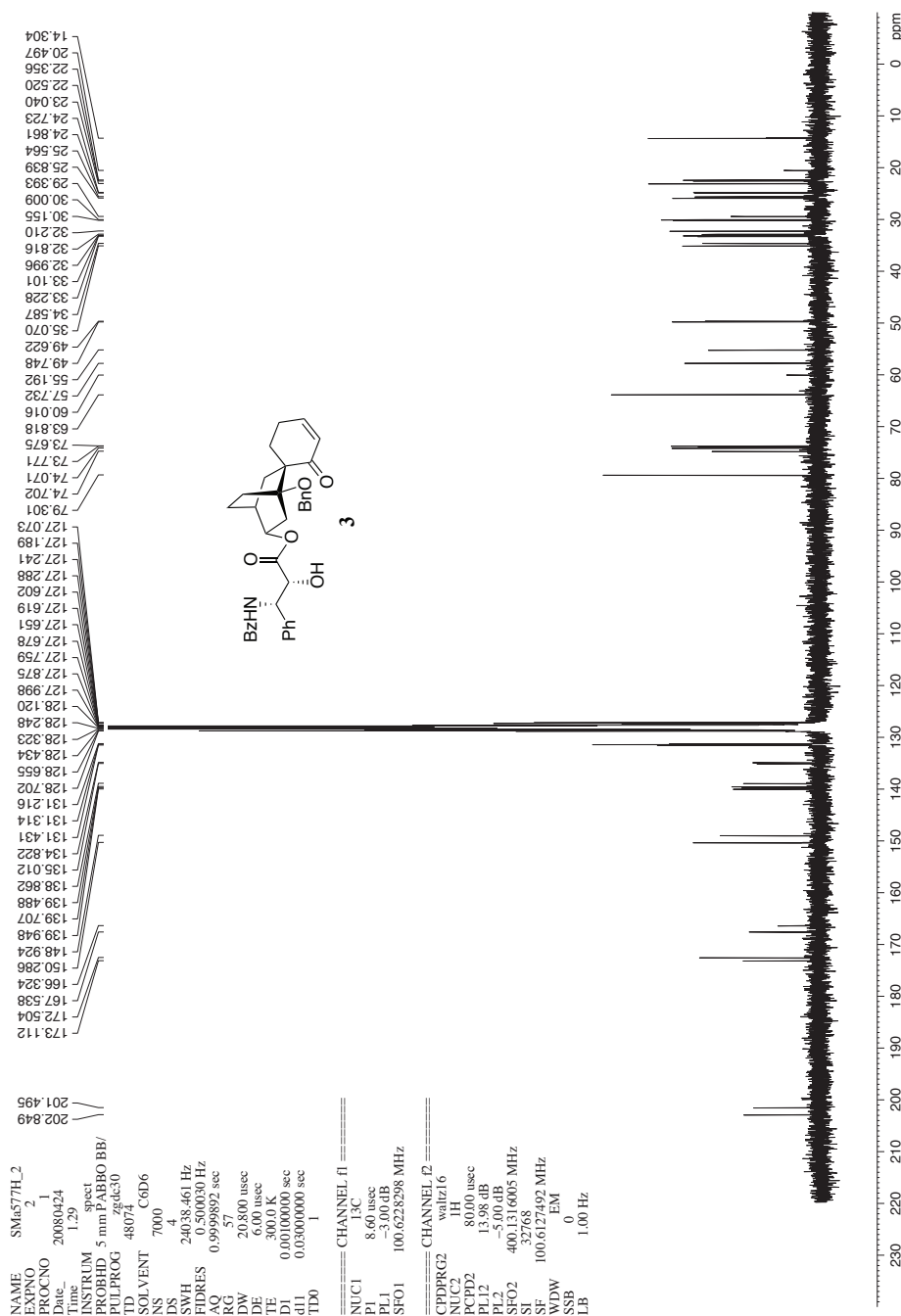
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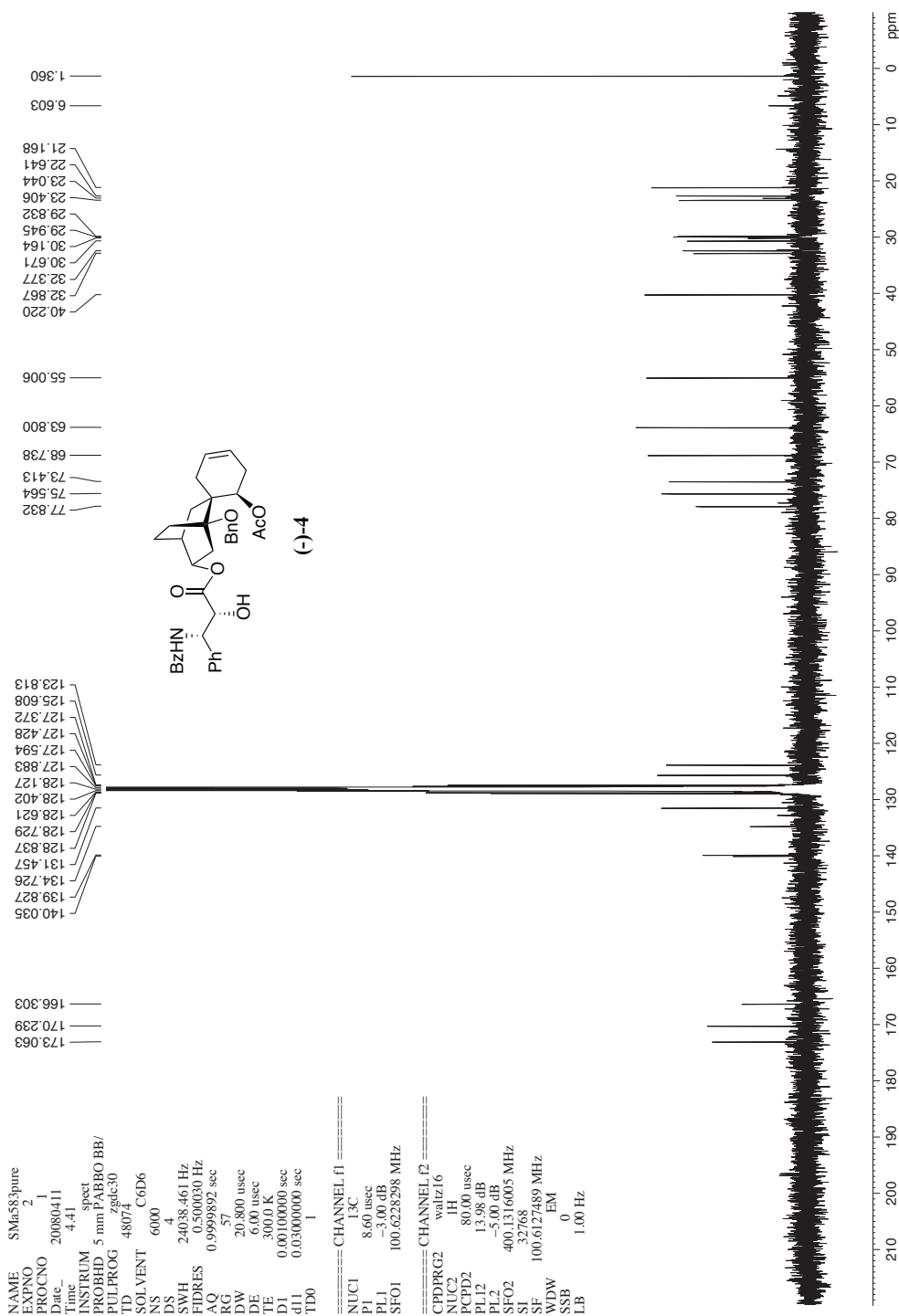
¹H-NMR (±)-(2*R*,3*S*)-*N*-benzoyl-3-phenylisoserine ester with spiro[1-benzyloxy-6-*endo*-hydroxybicyclo[2.2.2]octane-2,1'-cyclohex-4'-en]-6'-one (**3**).



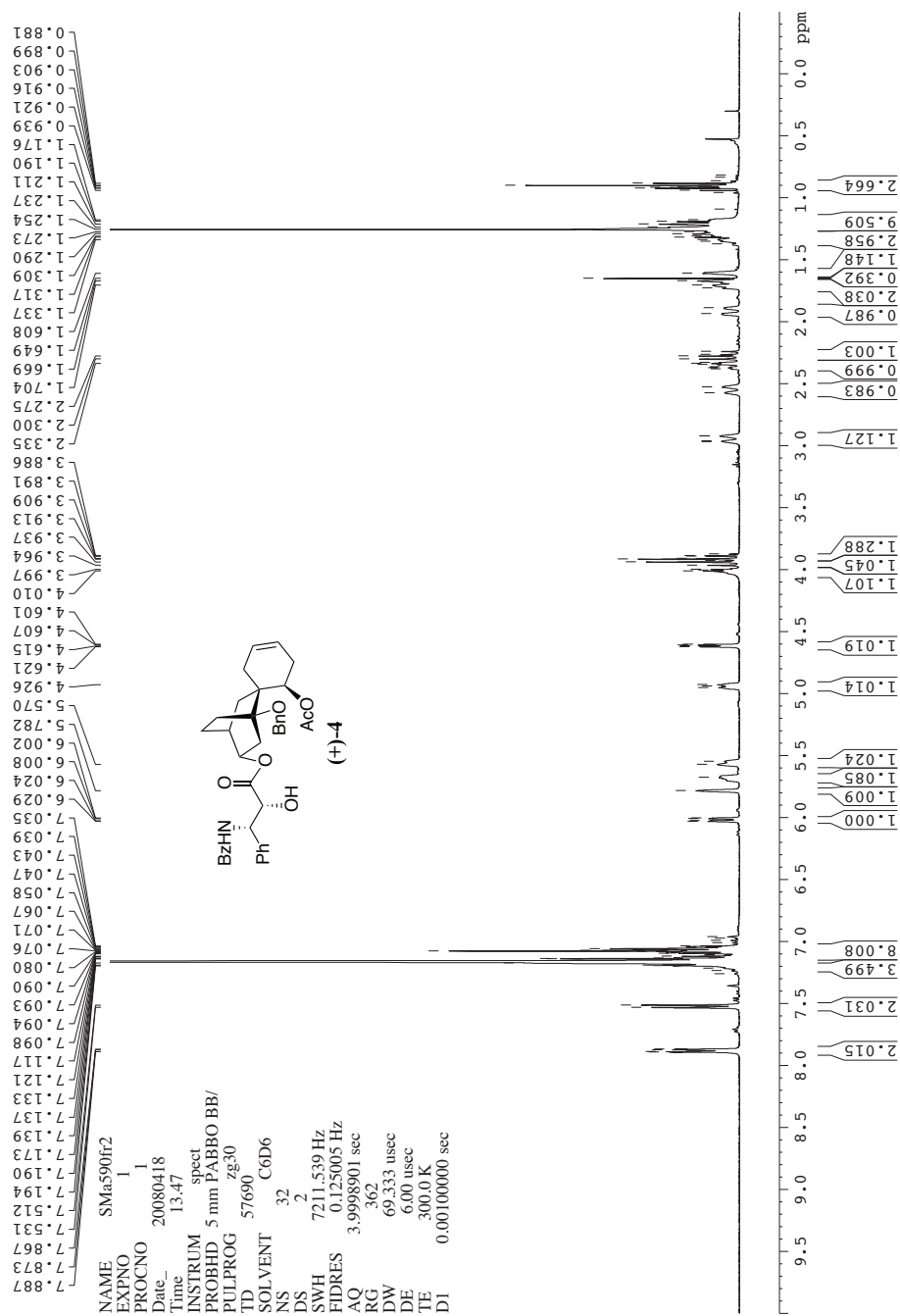
¹³C-NMR (±)-(2*R*,3*S*)-*N*-benzoyl-3-phenylisoserine ester with spiro[1-benzyloxy-6-*endo*-hydroxybicyclo[2.2.2]octane-2,1'-cyclohex-4'-en]-6'-one (**3**).



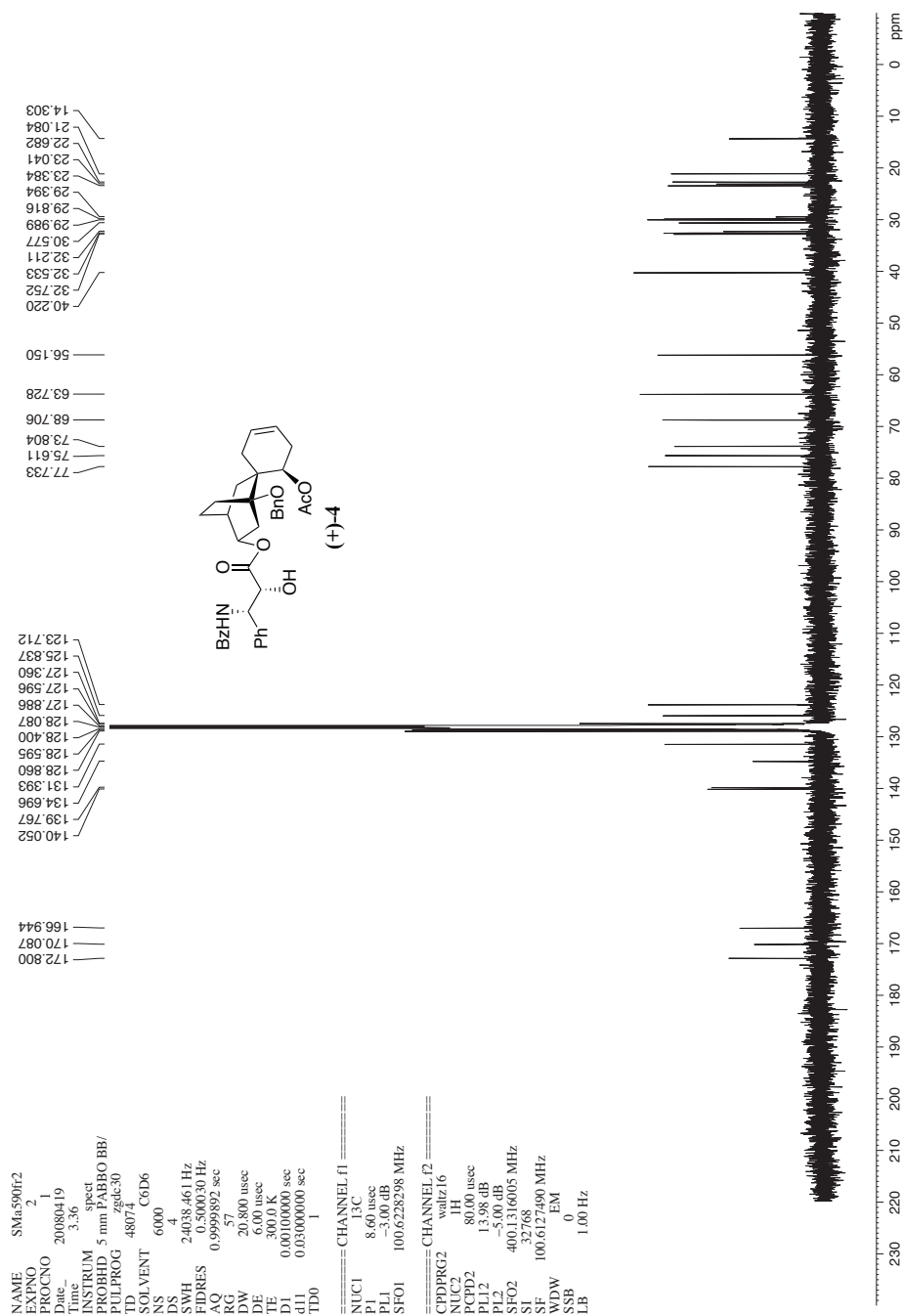
¹³C-NMR (–)-(2*R*,3*S*)-*N*-benzoyl-3-phenylisoserine ester with
(1*R**,2,1'*R**,5*S**,6'*R**)-spiro[1-benzyloxy-6-*endo*-hydroxybicyclo[2.2.2]octane-
2,1'-cyclohex-3'-en]-6'-acetate (–)-(4)



¹H-NMR (1*S,2,1'*S**,5*R**,6'*S**)-spiro[1-benzyloxy-6-*endo*-hydroxybicyclo[2.2.2]octane-2,1'-cyclohex-3'-en]-6'-acetate (+)-(4).**



¹³C-NMR (1*S,2,1'*S**,5*R**,6'*S**)-spiro[1-benzyloxy-6-*endo*-hydroxybicyclo[2.2.2]octane-2,1'-cyclohex-3'-en]-6'-acetate (+)-(4).**



2. Dose-response curves

Biological data for Table 1.
Dose response curves for treatment with compounds 3-8 and paclitaxel on MCF10A, MCF7, SkBr3, HCC1937 and L56BrCl cells. The biological effect was evaluated with an MTT assay.

