

## Supporting information

### **Design and synthesis of novel oleanolic acid based chromenes as anti-proliferative and anti-inflammatory agents**

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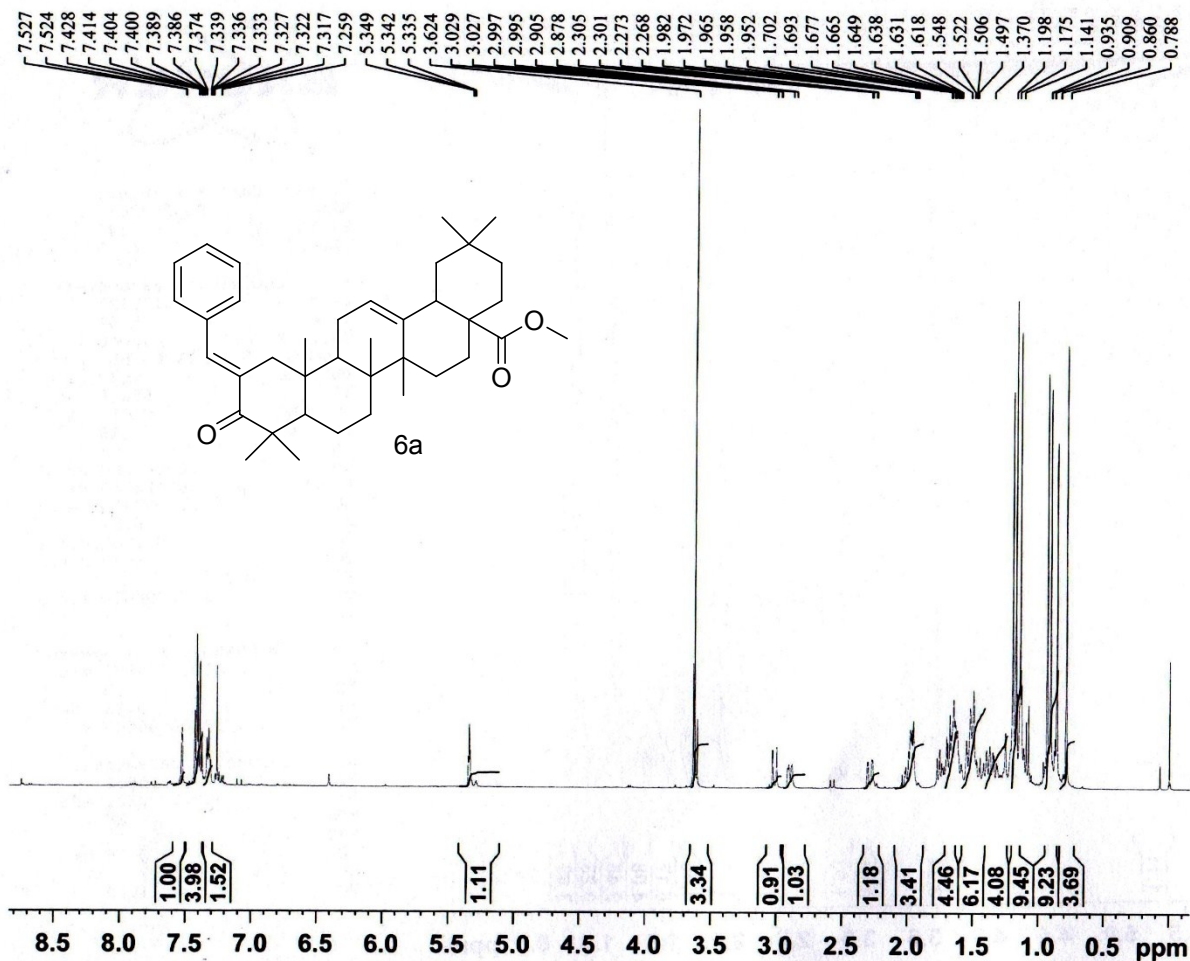
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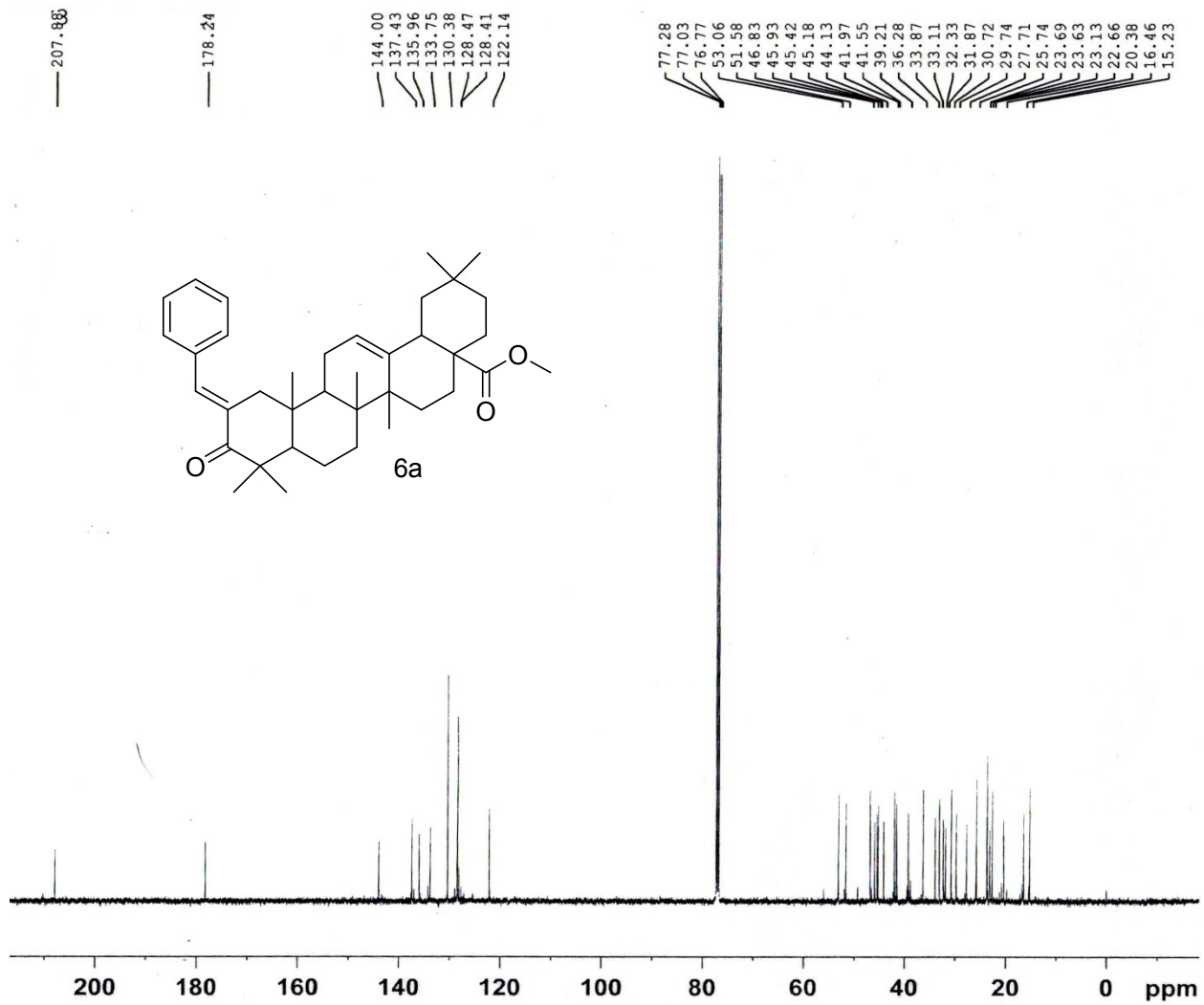
[dushyant.bhu@gmail.com](mailto:dushyant.bhu@gmail.com)

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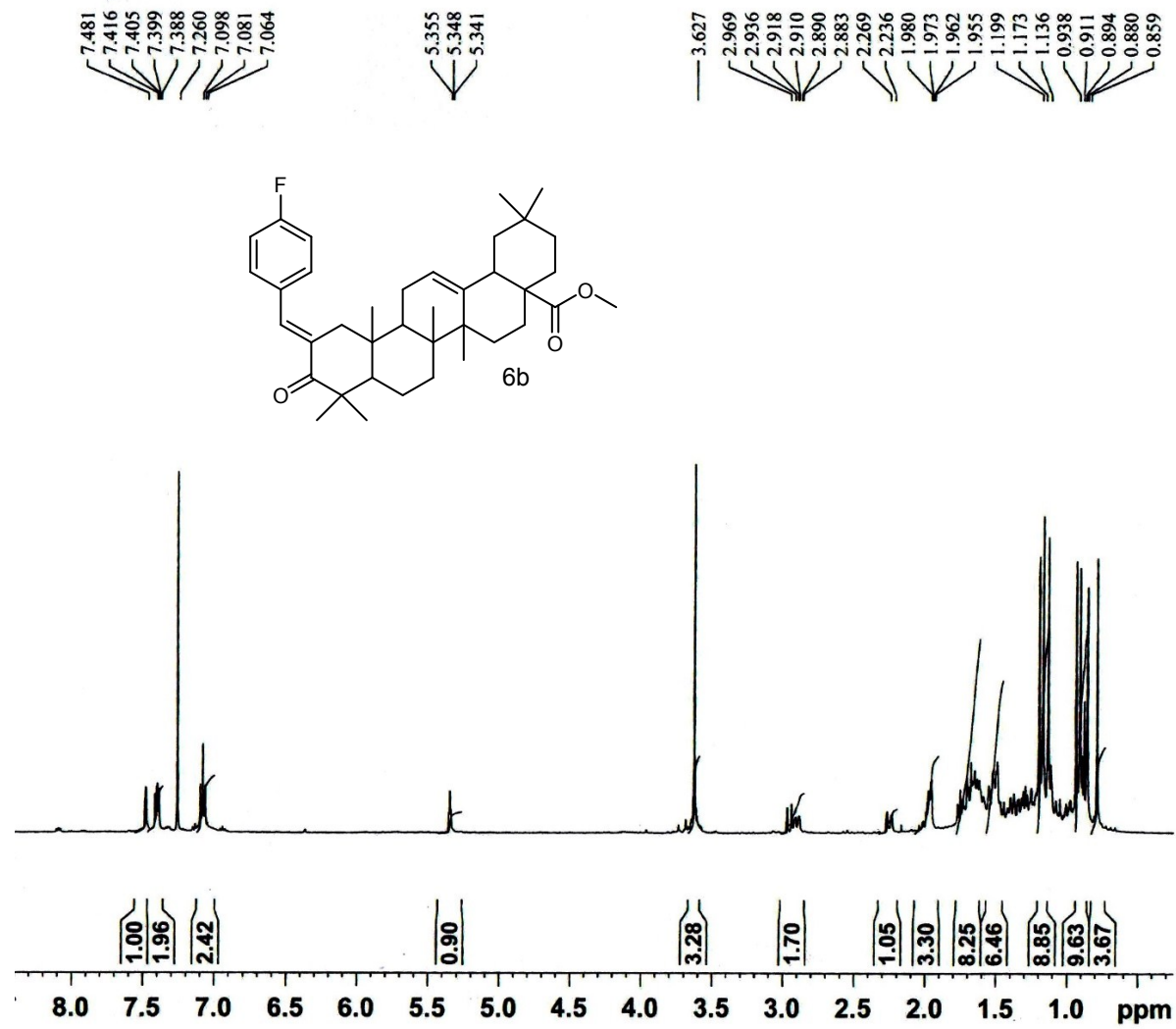
**(E)-methyl-11-benzylidene-2,2,6a,6b,9,9,12a-heptamethyl-10-oxo1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,12b,13,14b-icosahydricene-4a carboxylate (6a)**

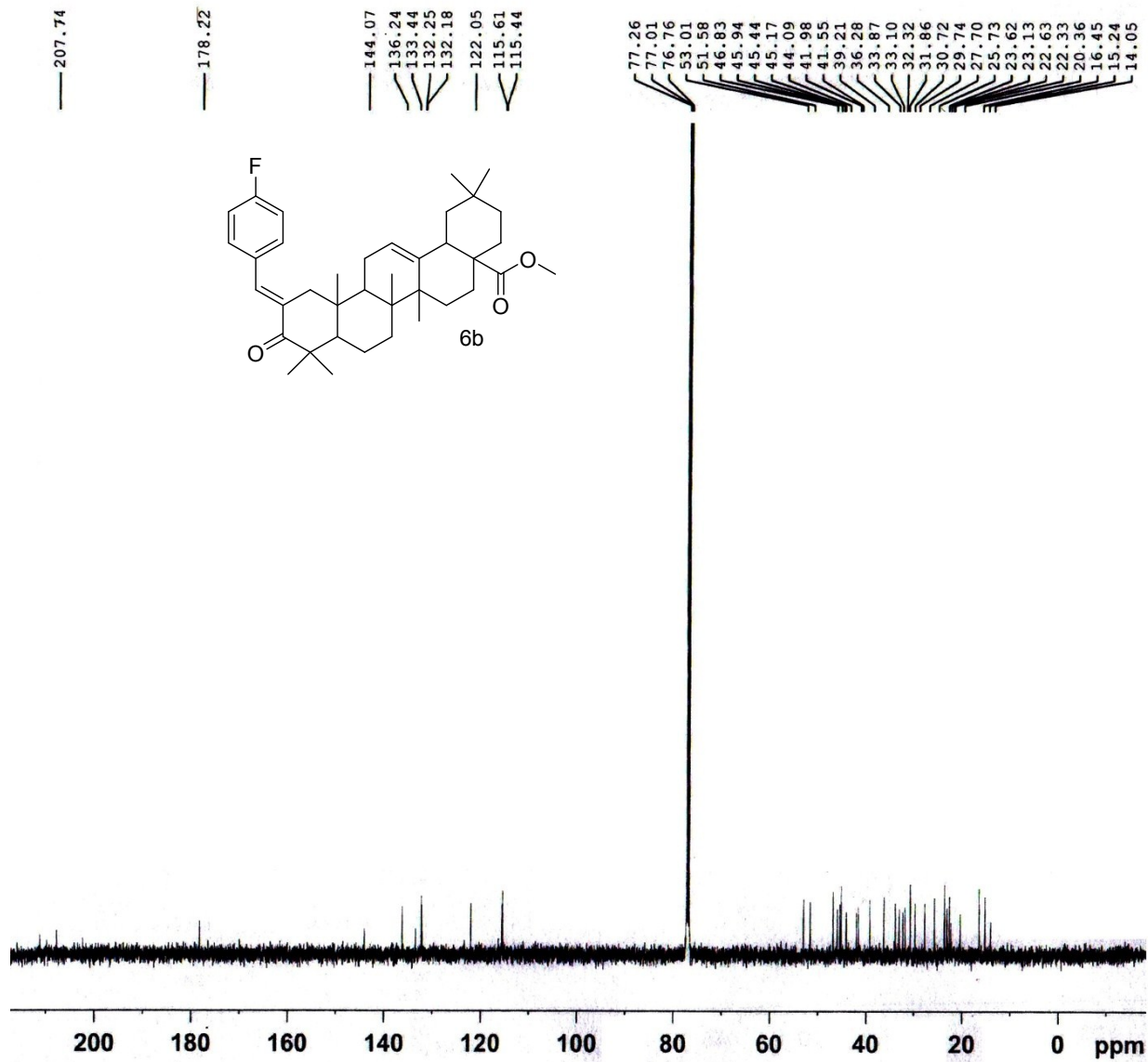




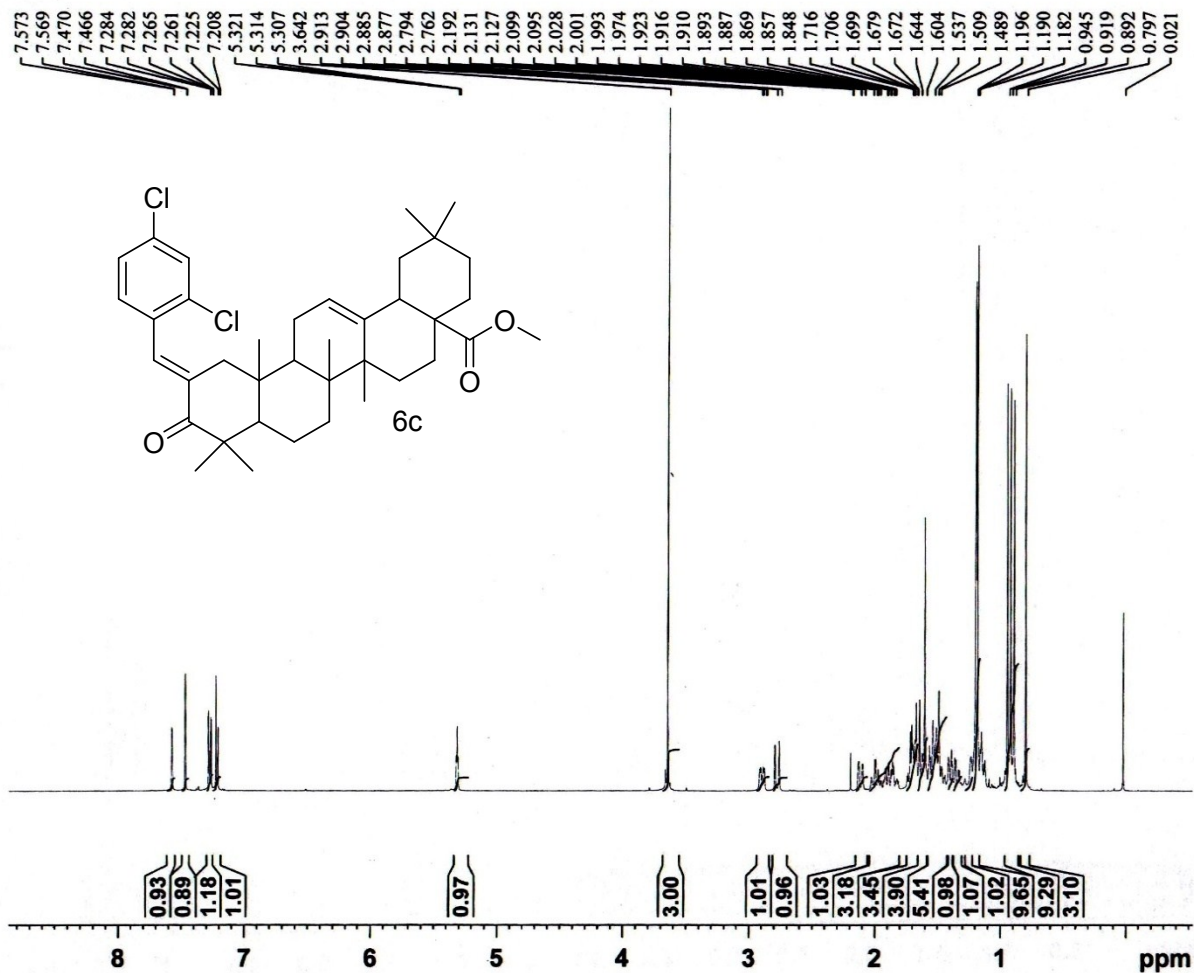


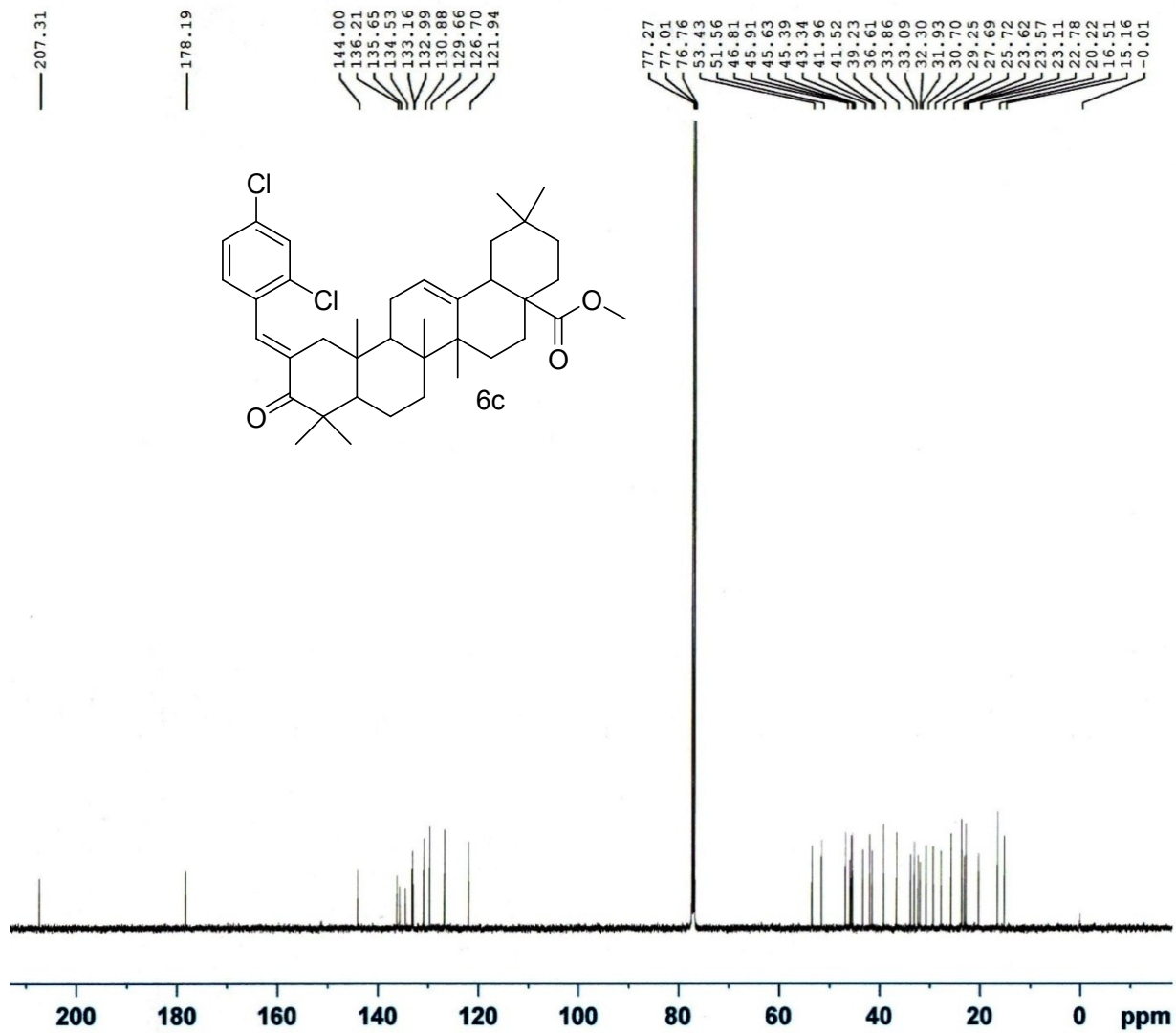
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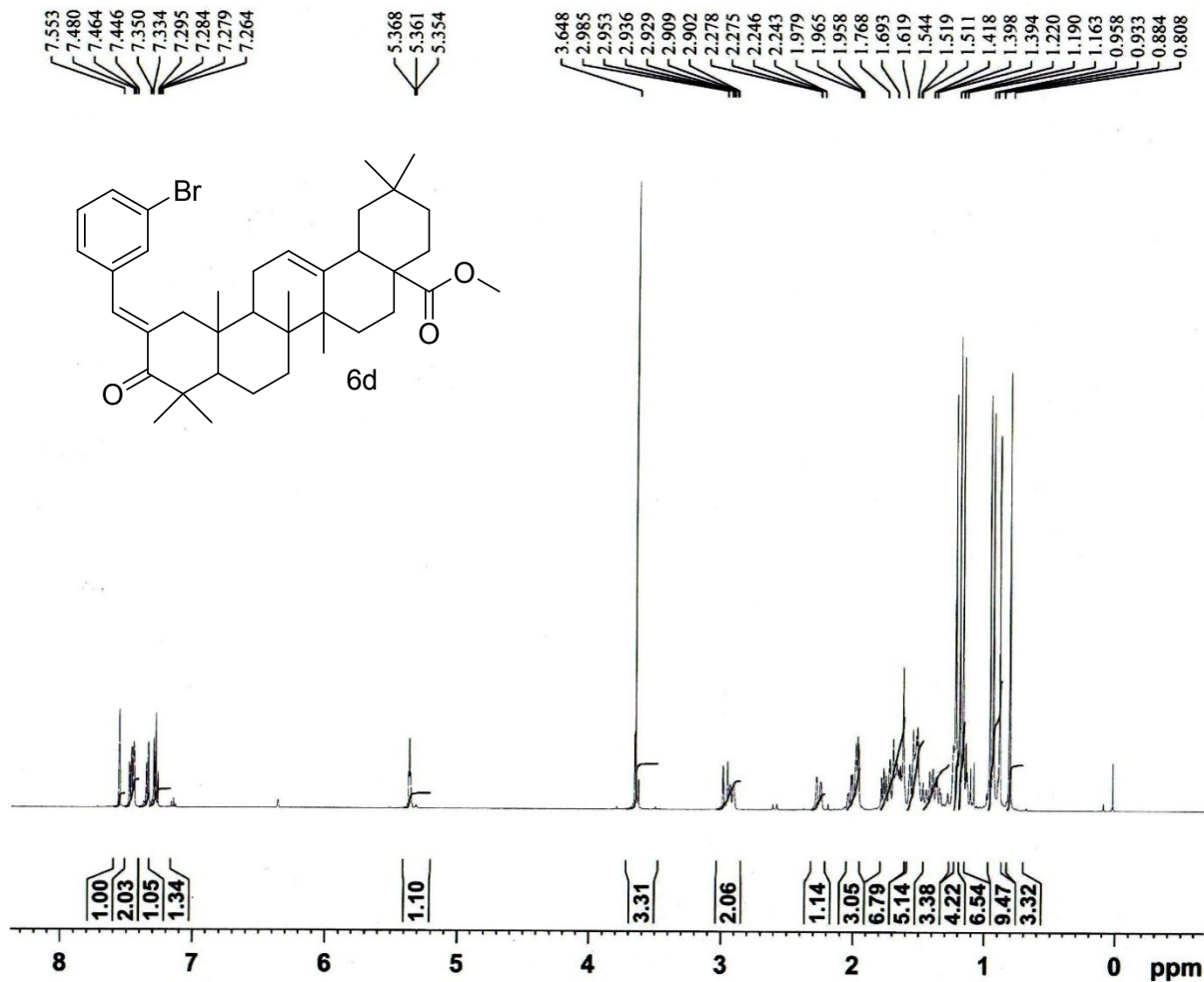


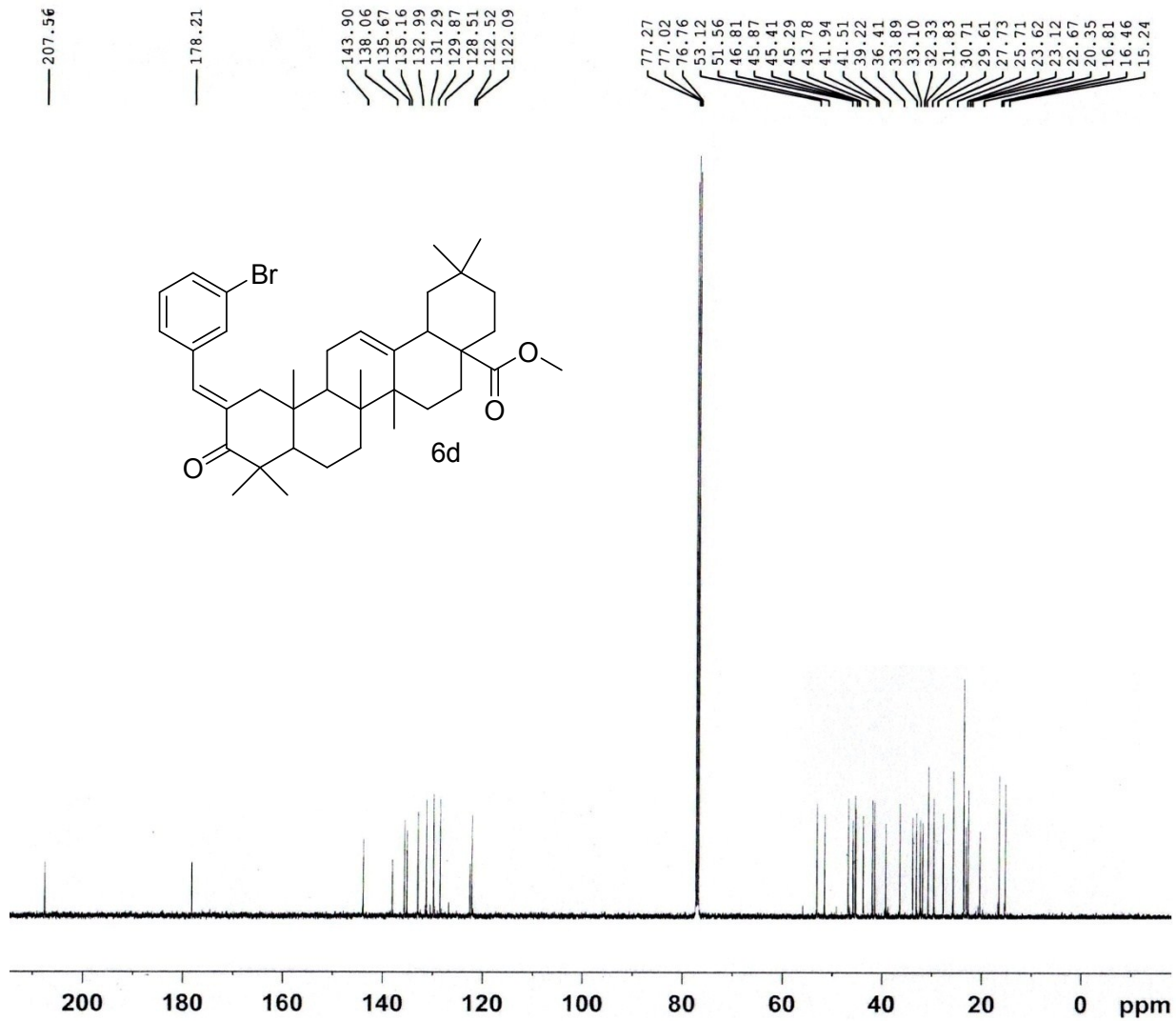
**(E)-methyl-11-(2,4-dichlorobenzylidene)-2,2,6a,6b,9,9,12a-heptamethyl-10-oxo-1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,12b,13,14b-icosahdropicene-4a-carboxylate (6c)**



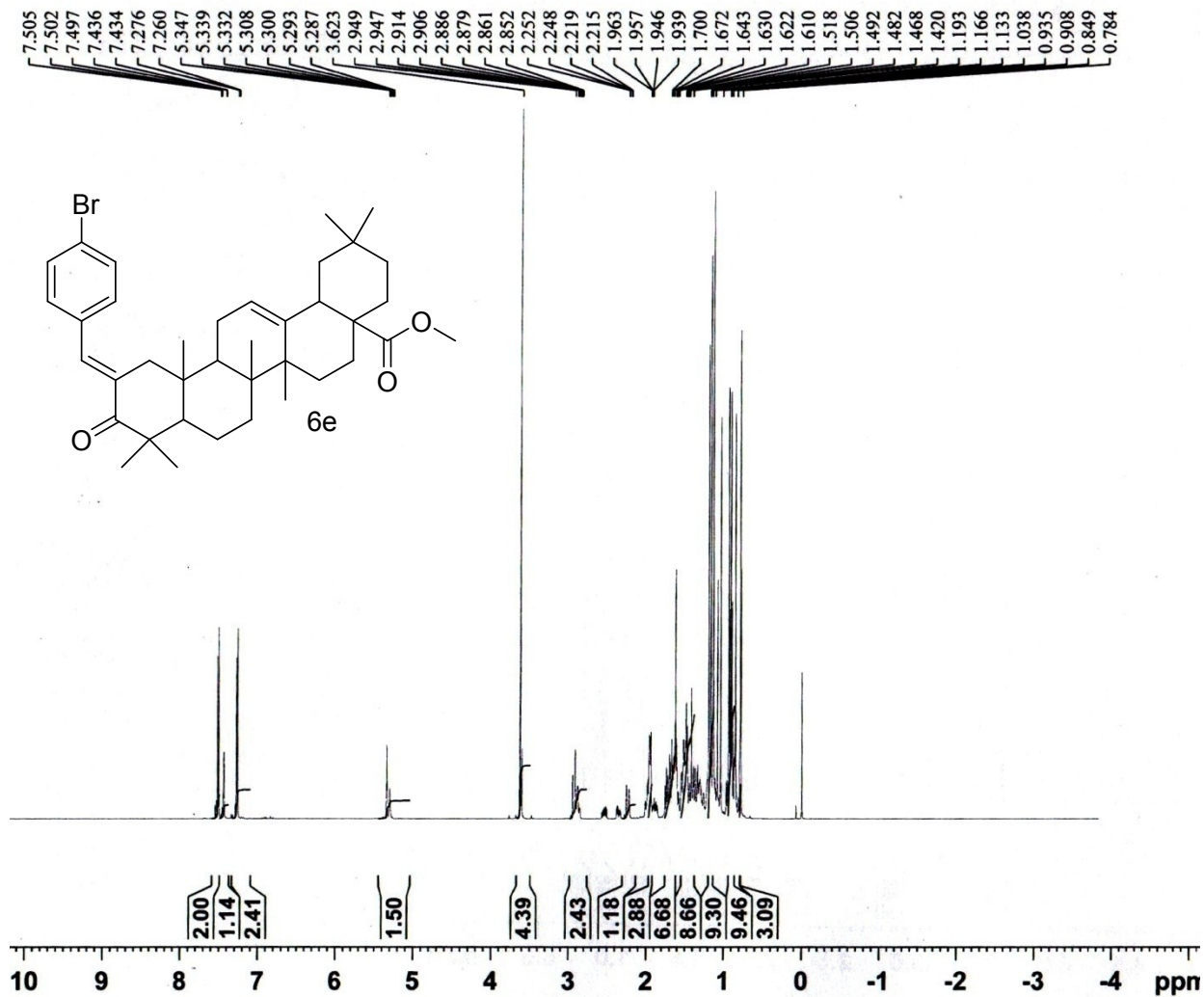


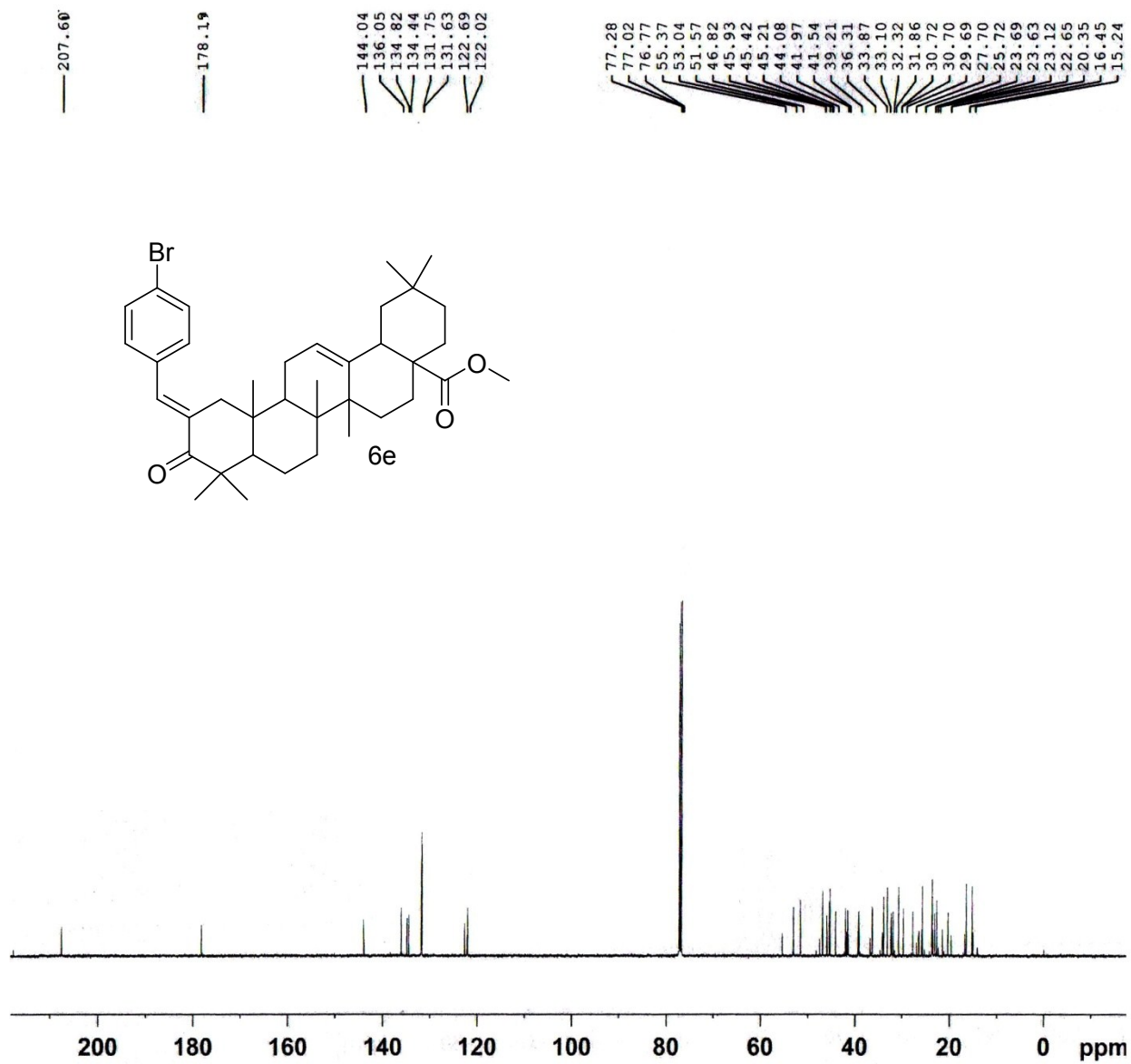
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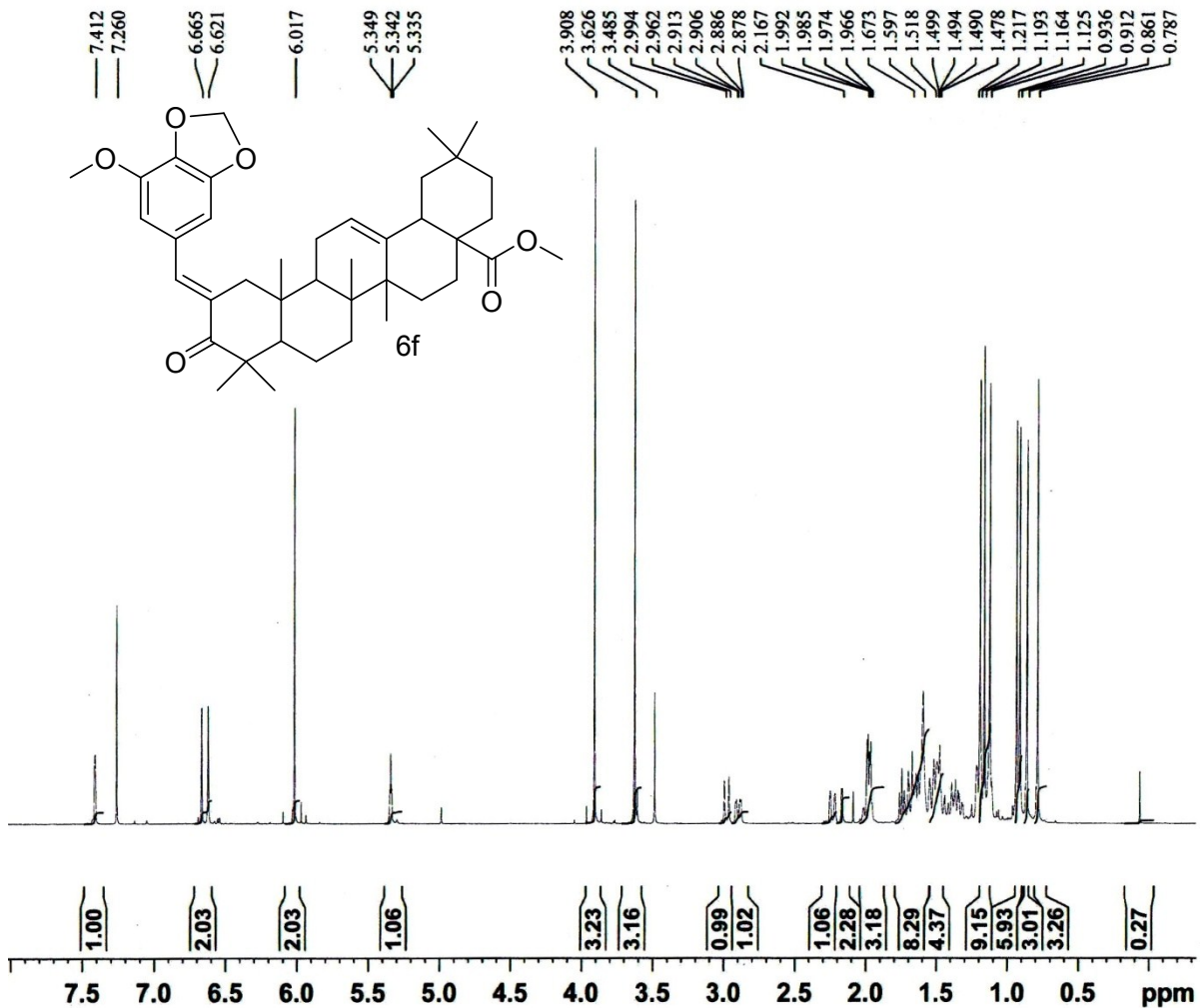
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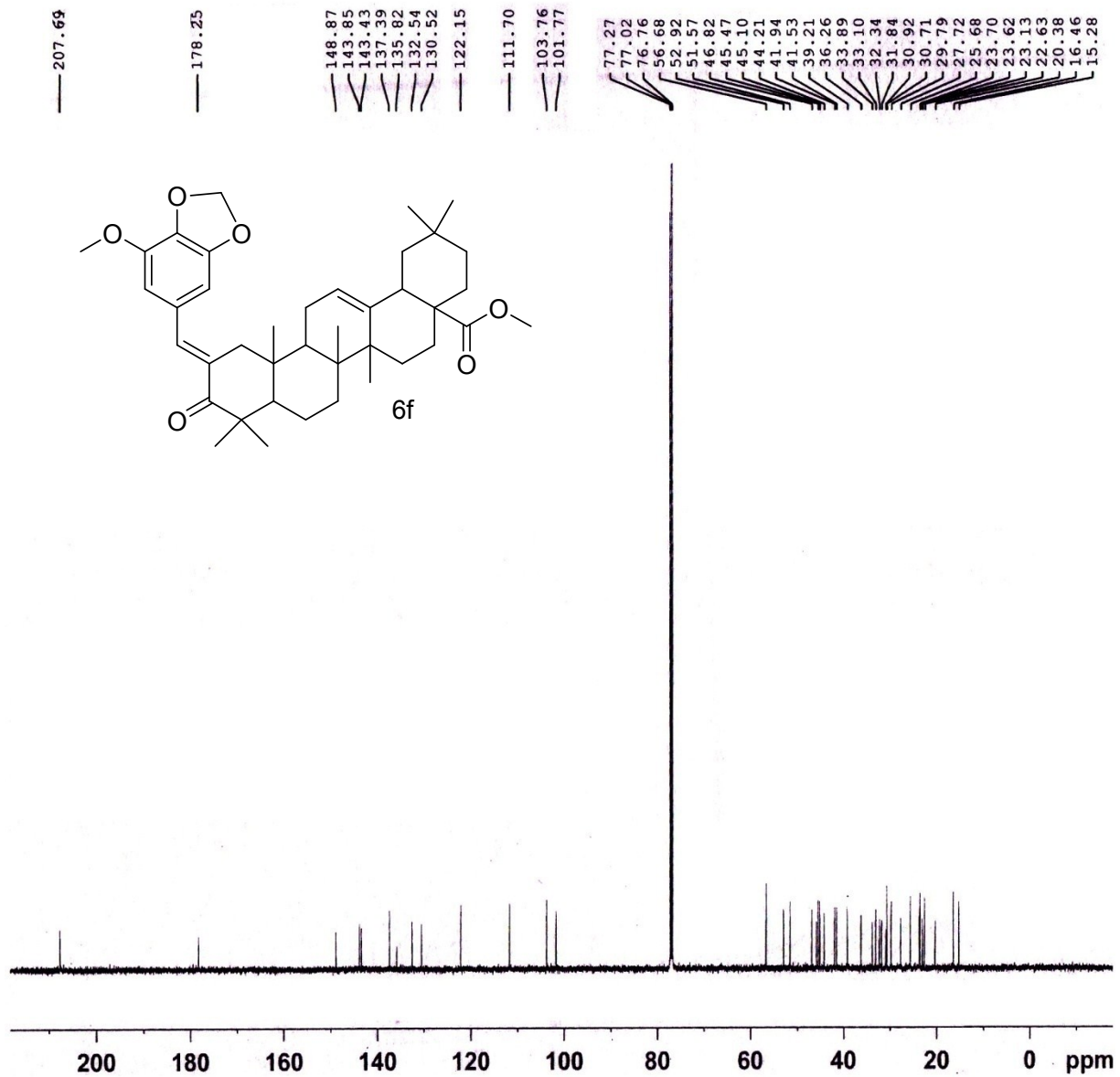




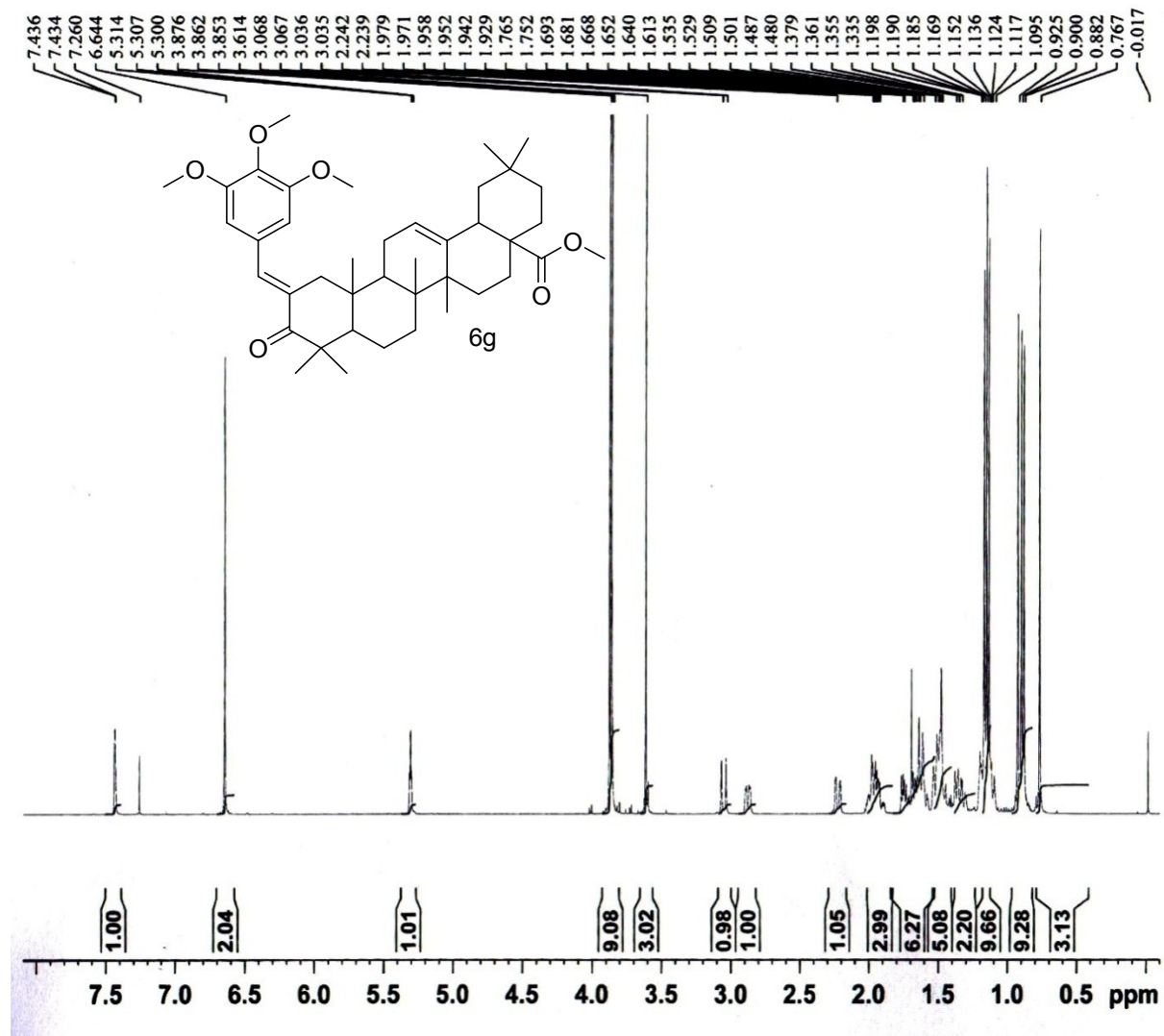


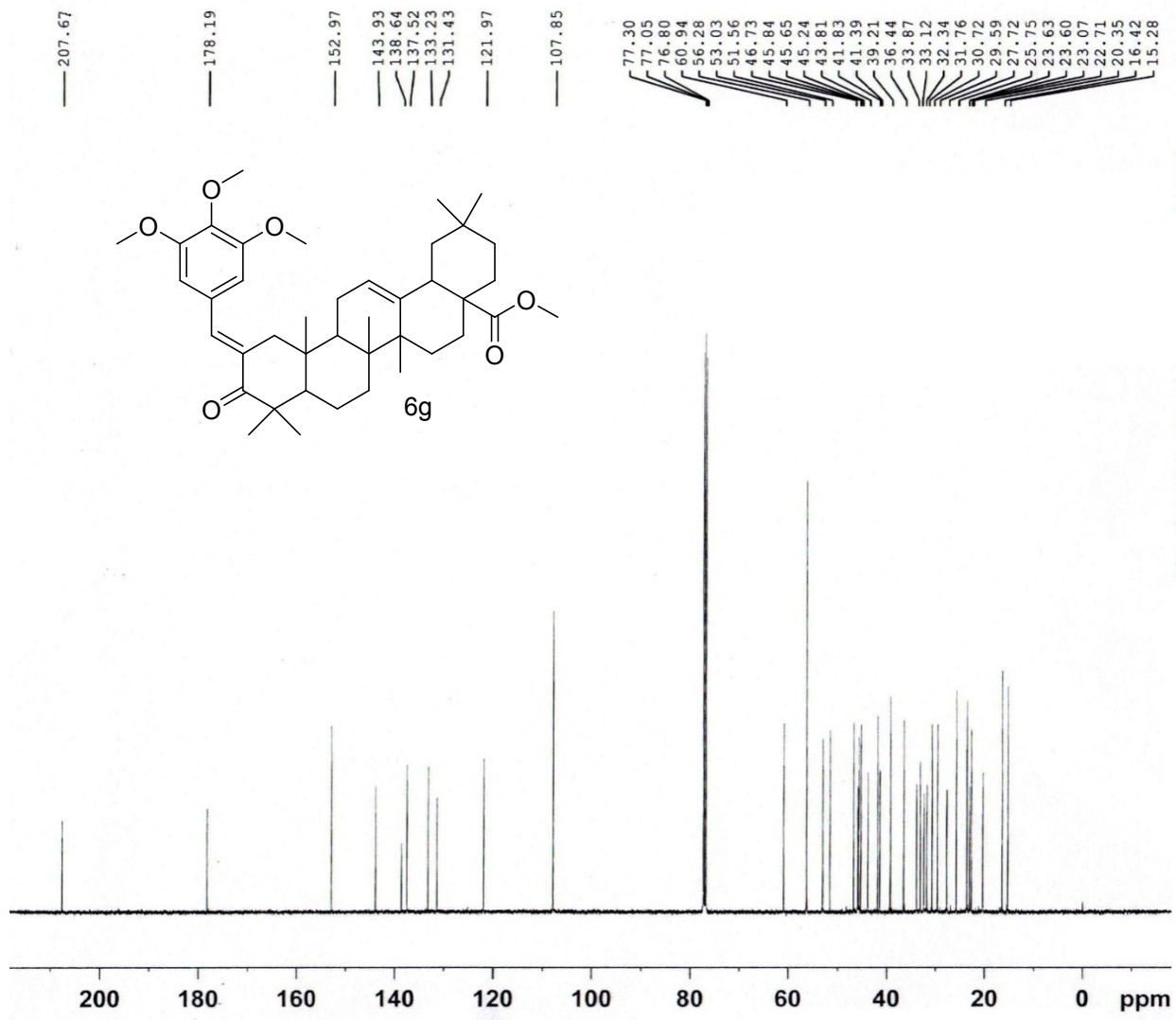
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carboxylate(6f)**



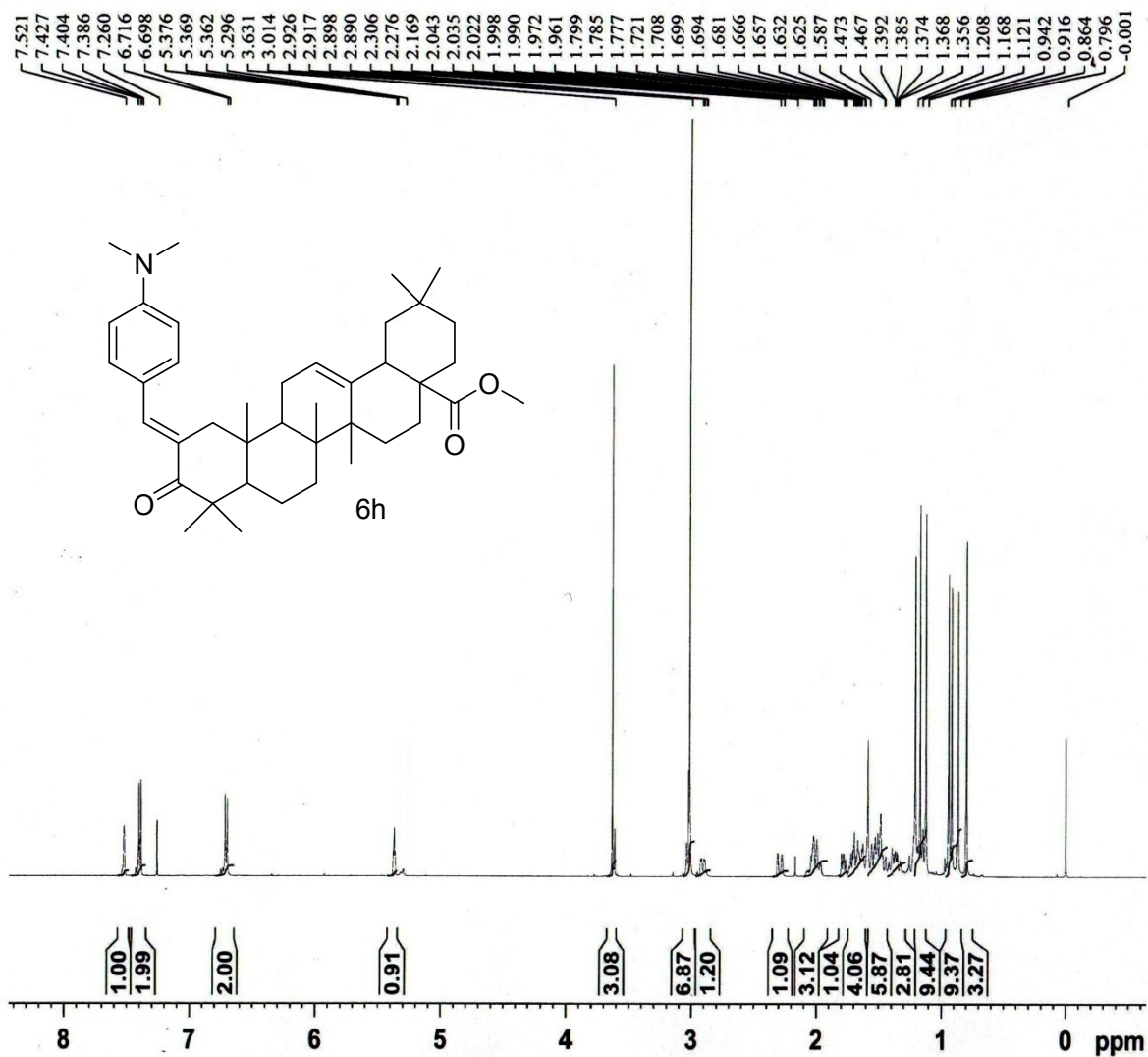


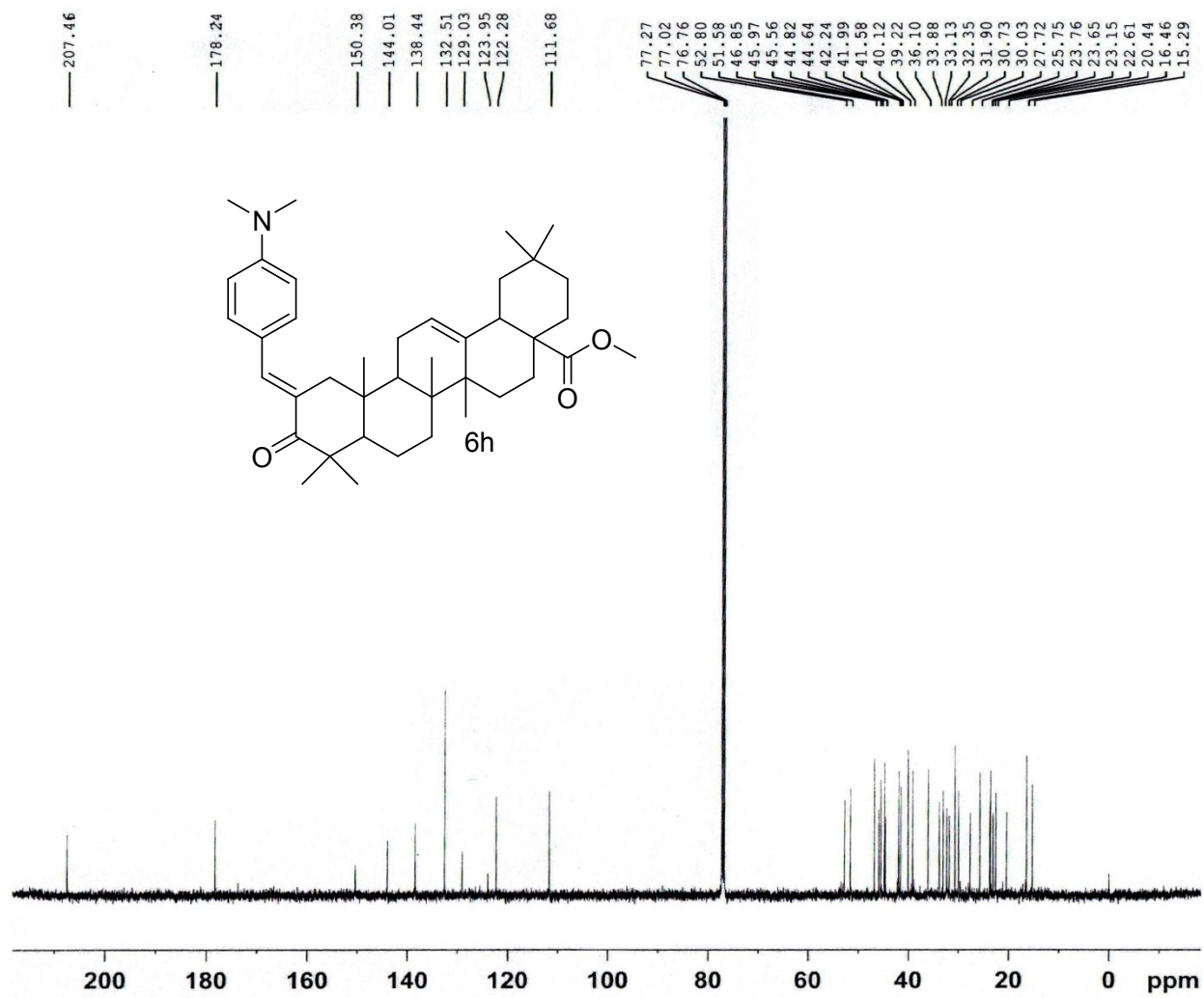
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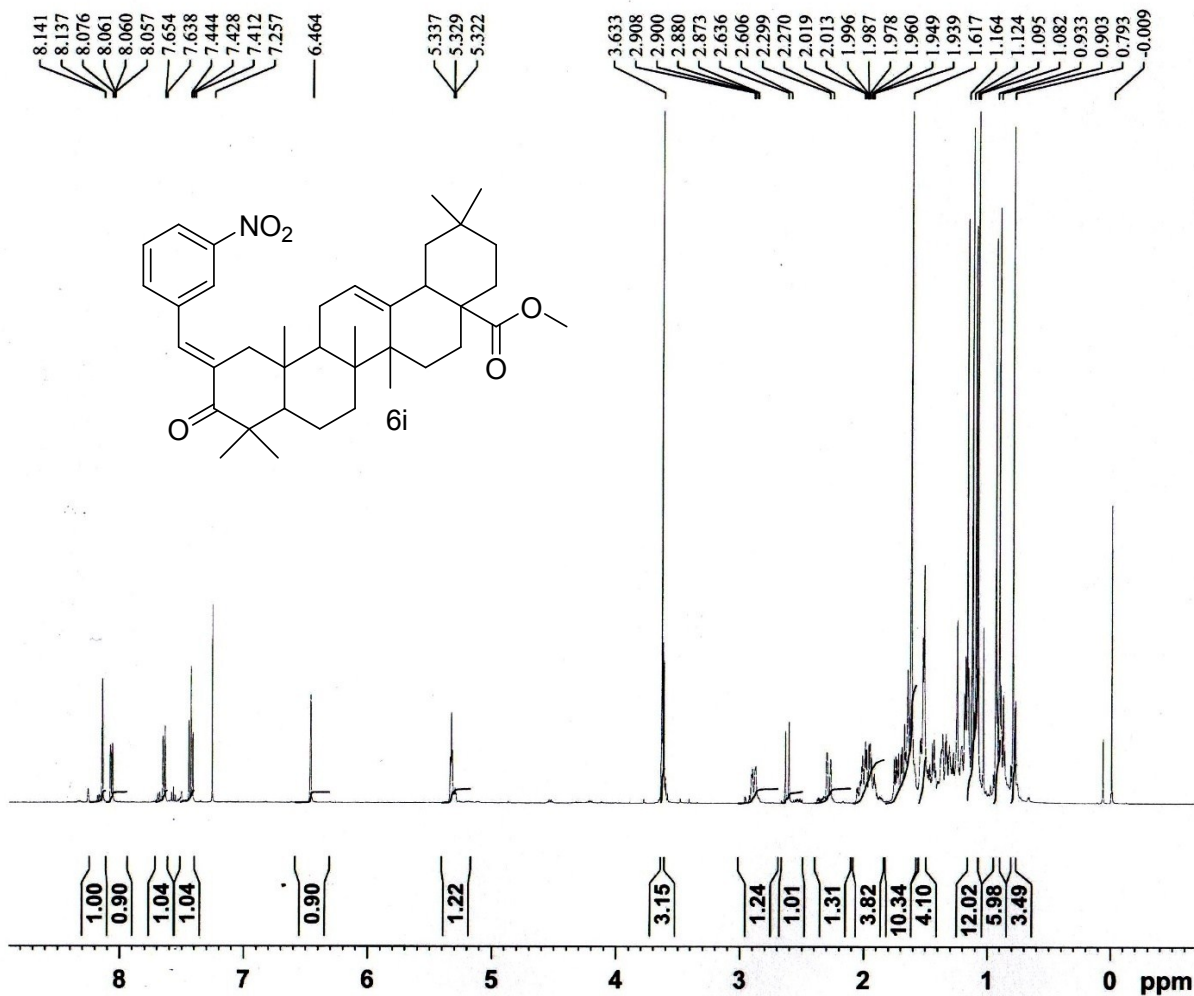


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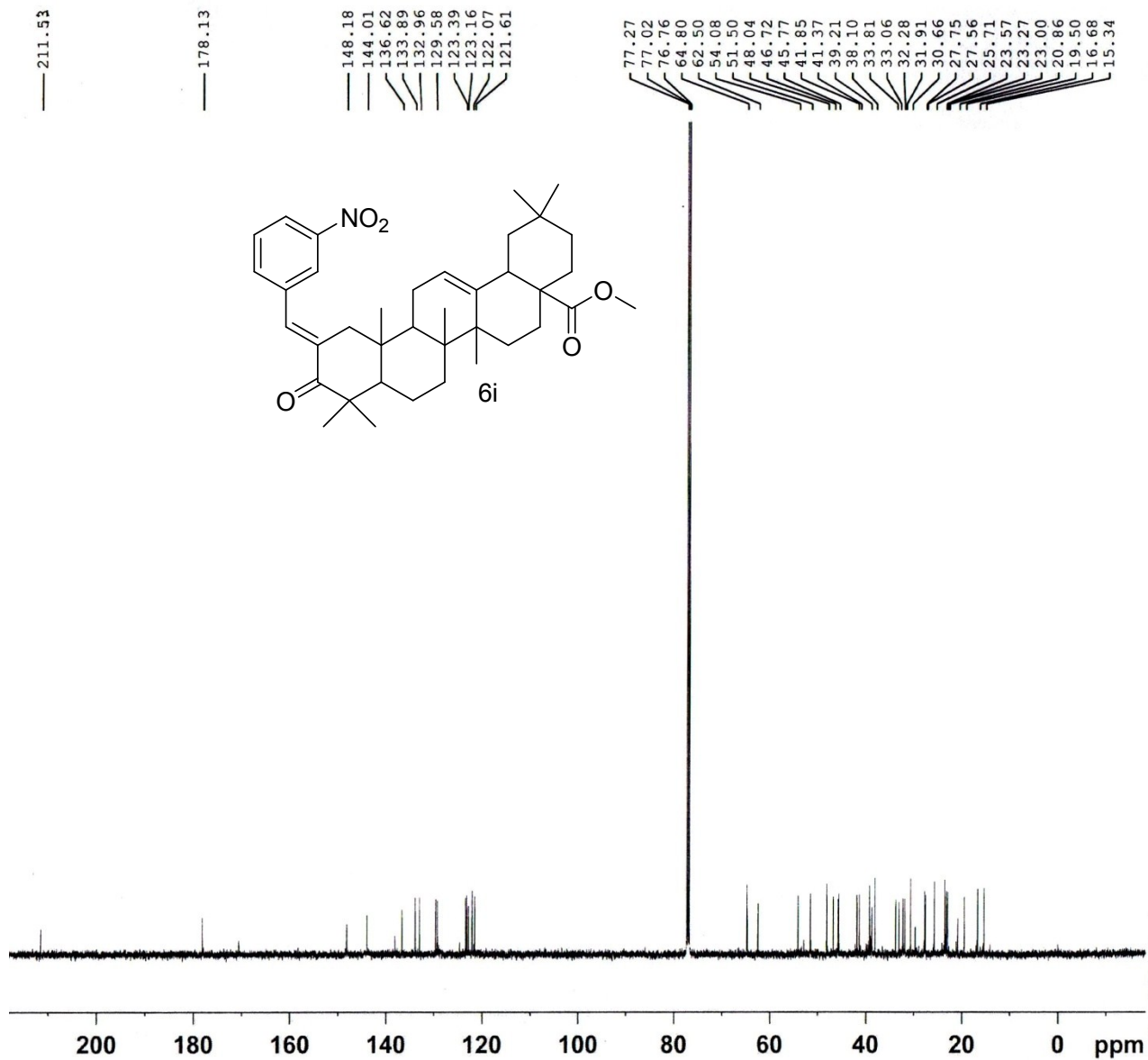




**(E)-methyl-2,2,6a,6b,9,9,12a-heptamethyl-11-(3-nitrobenzylidene)-10-oxo-1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,12b,13,14b-icosahydricene-4a-carboxylate (6i)**

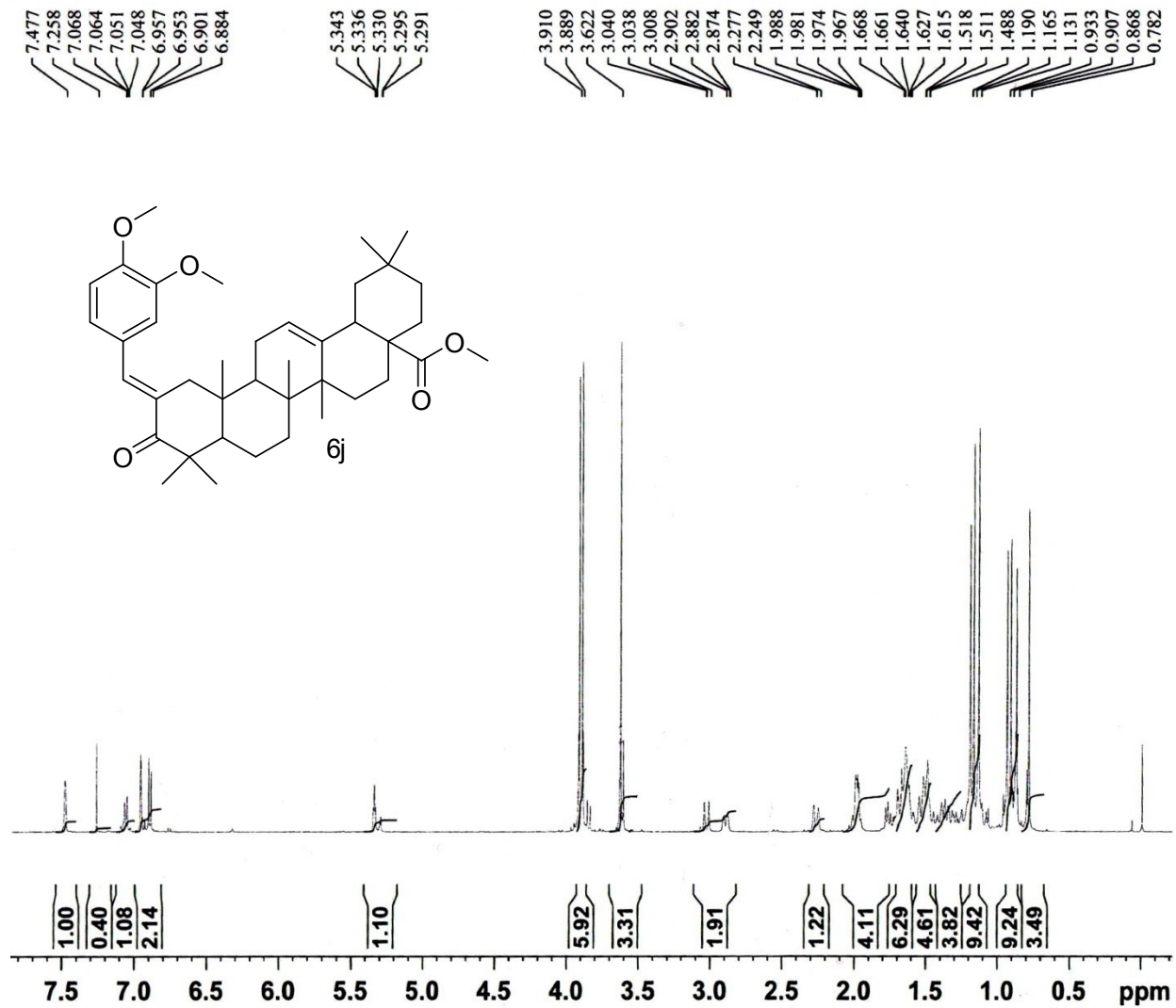


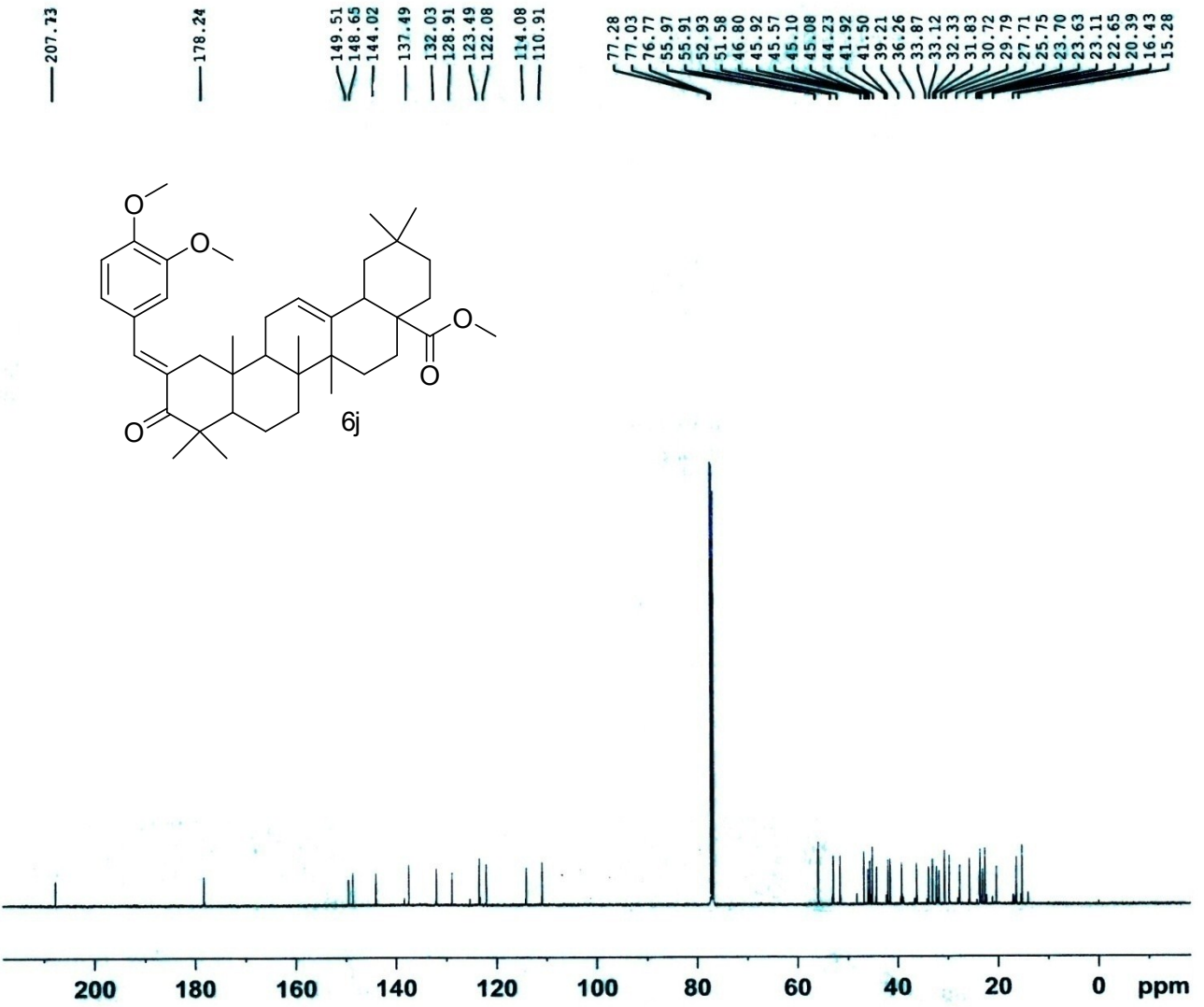




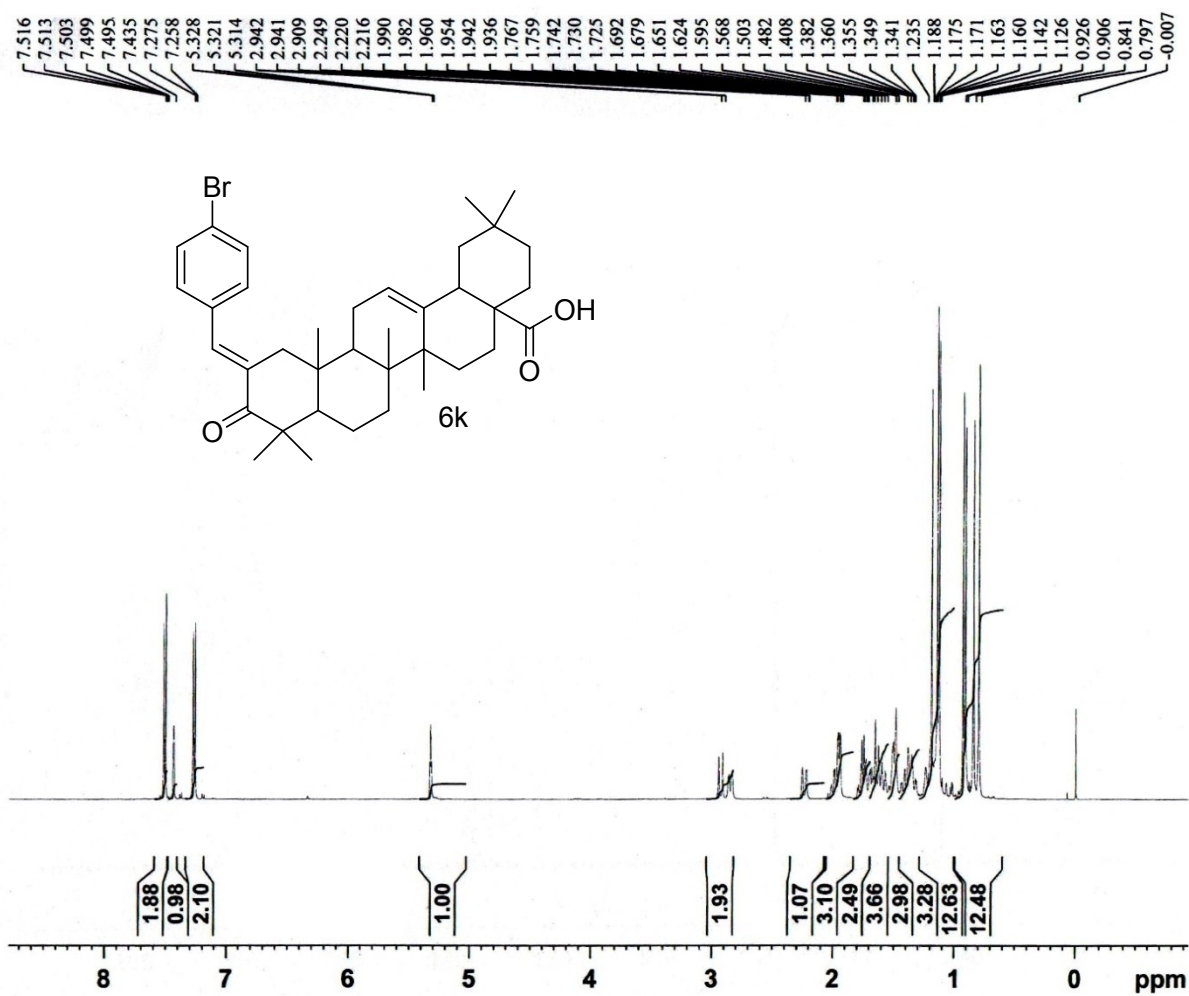


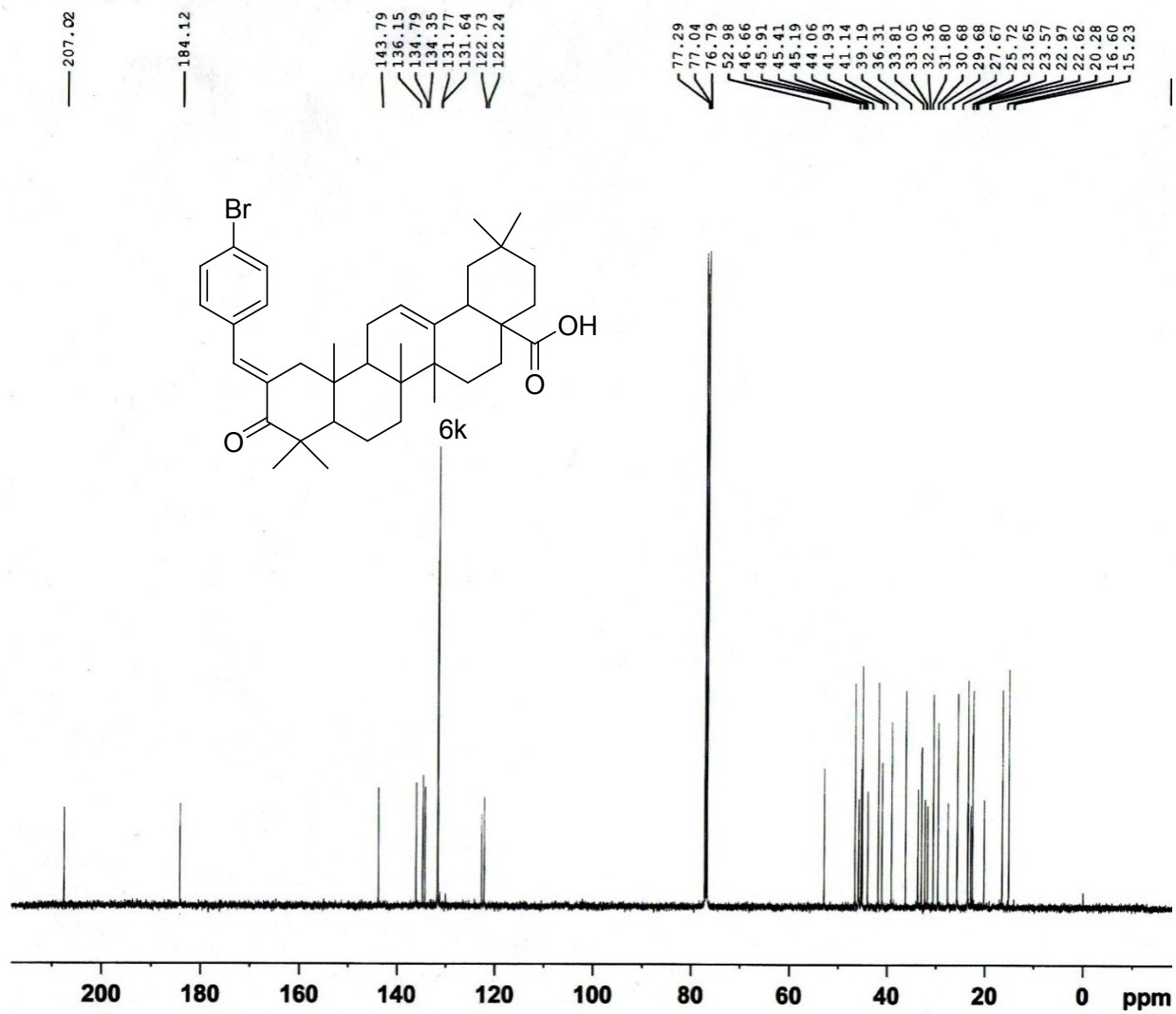
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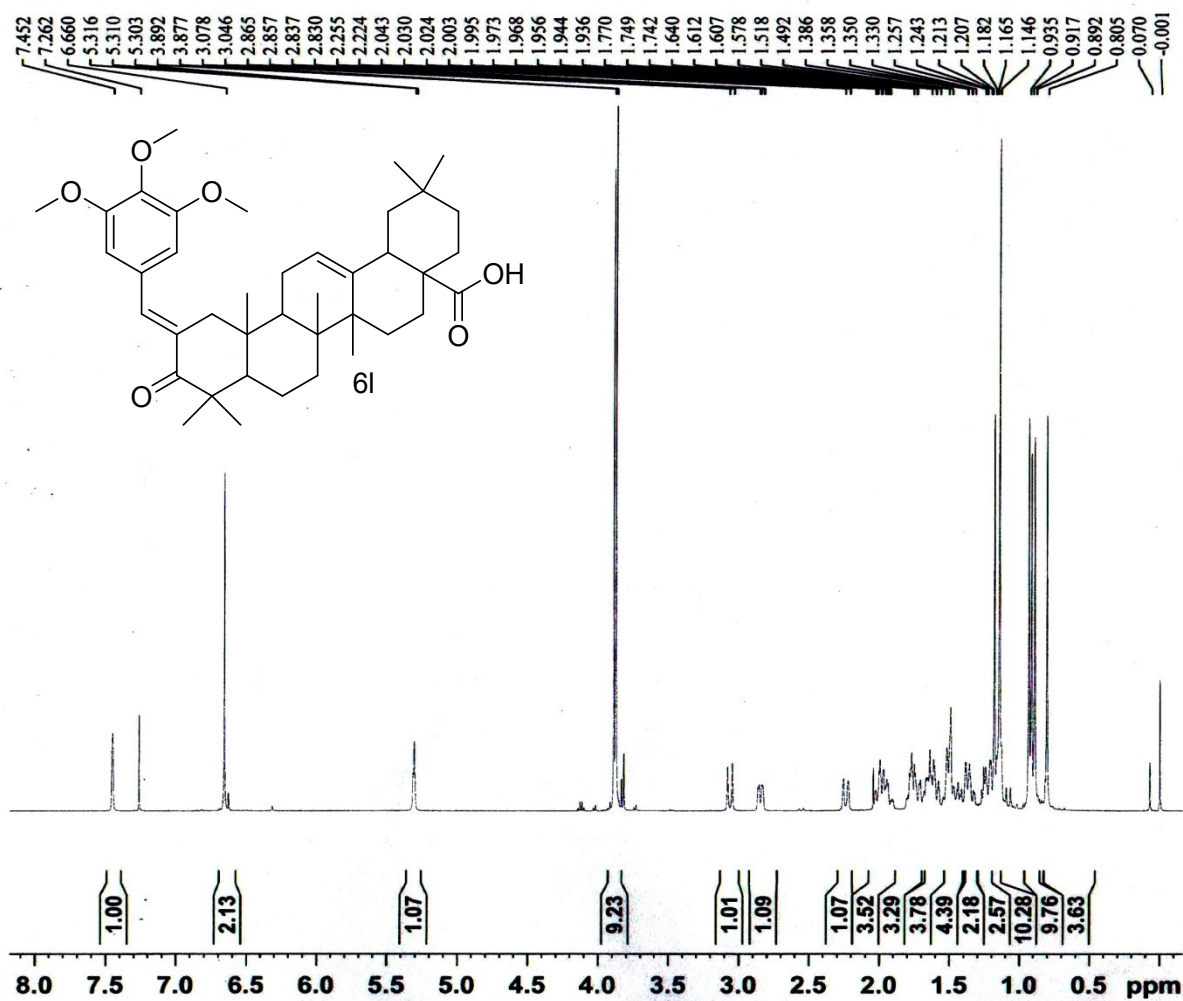


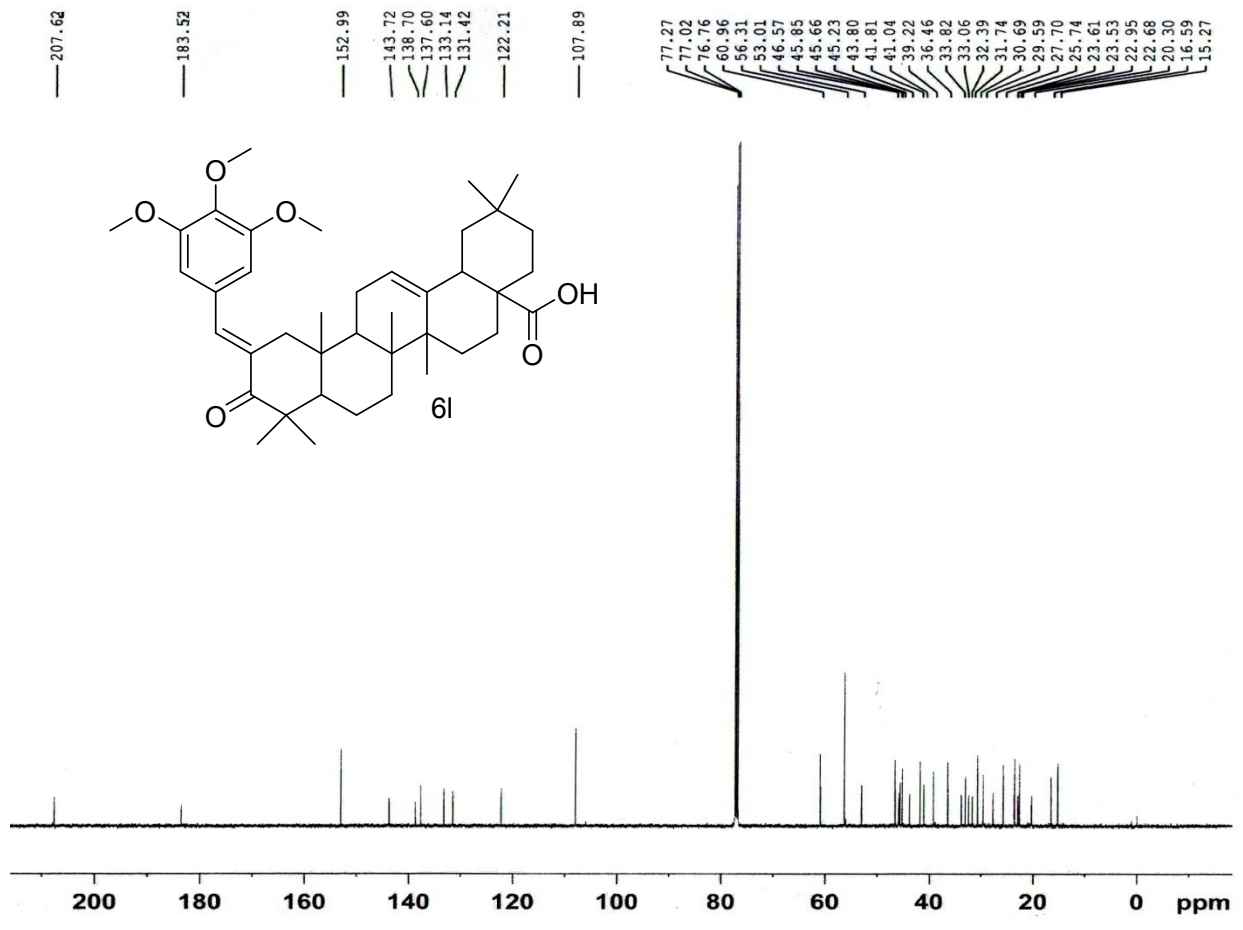
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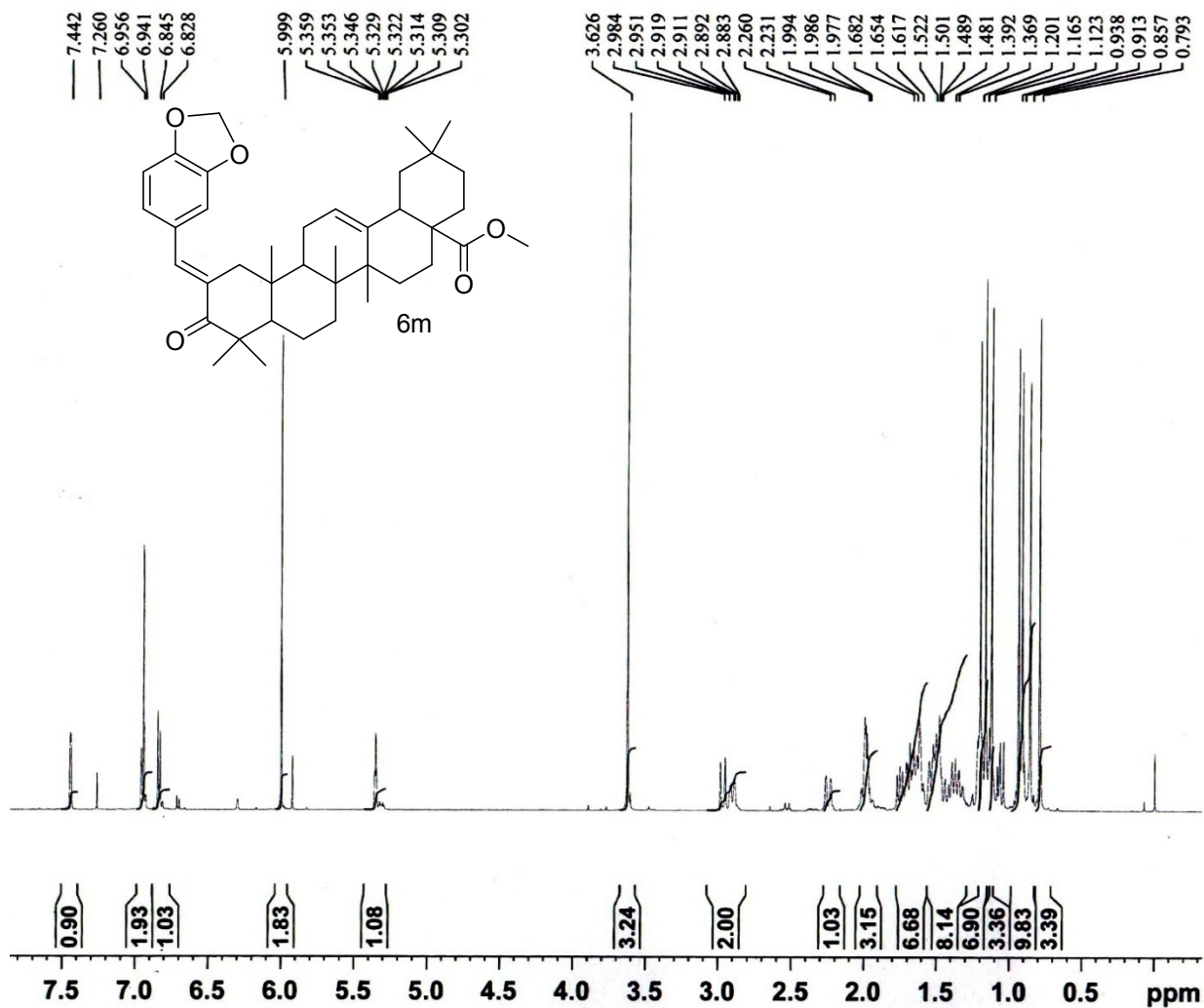


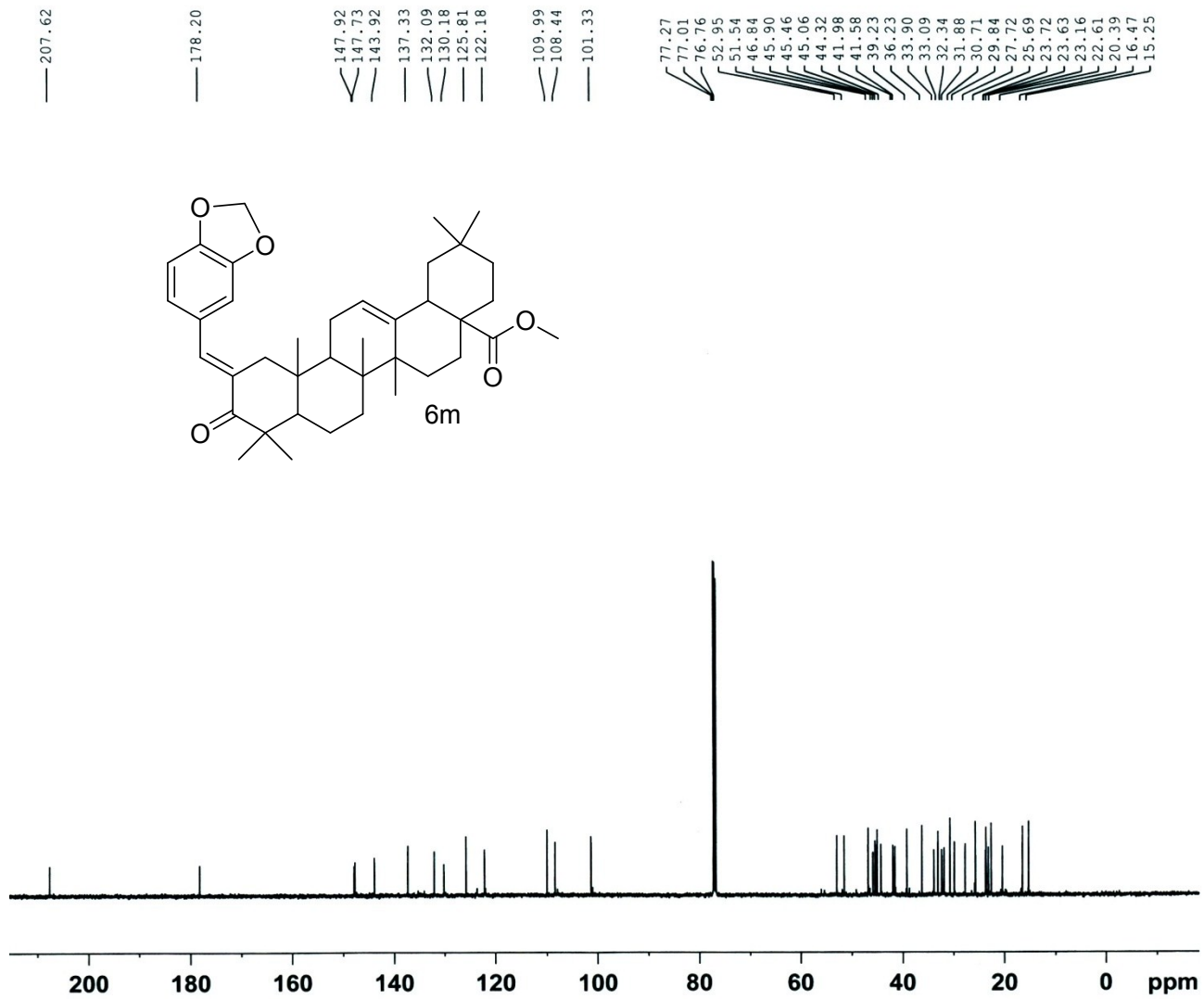
**(E)-2,2,6a,6b,9,9,12a-heptamethyl-10-oxo-11-(3,4,5-trimethoxybenzylidene)-1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,12b,13,14b-icosahydricene-4a-carboxylic acid(6l)**





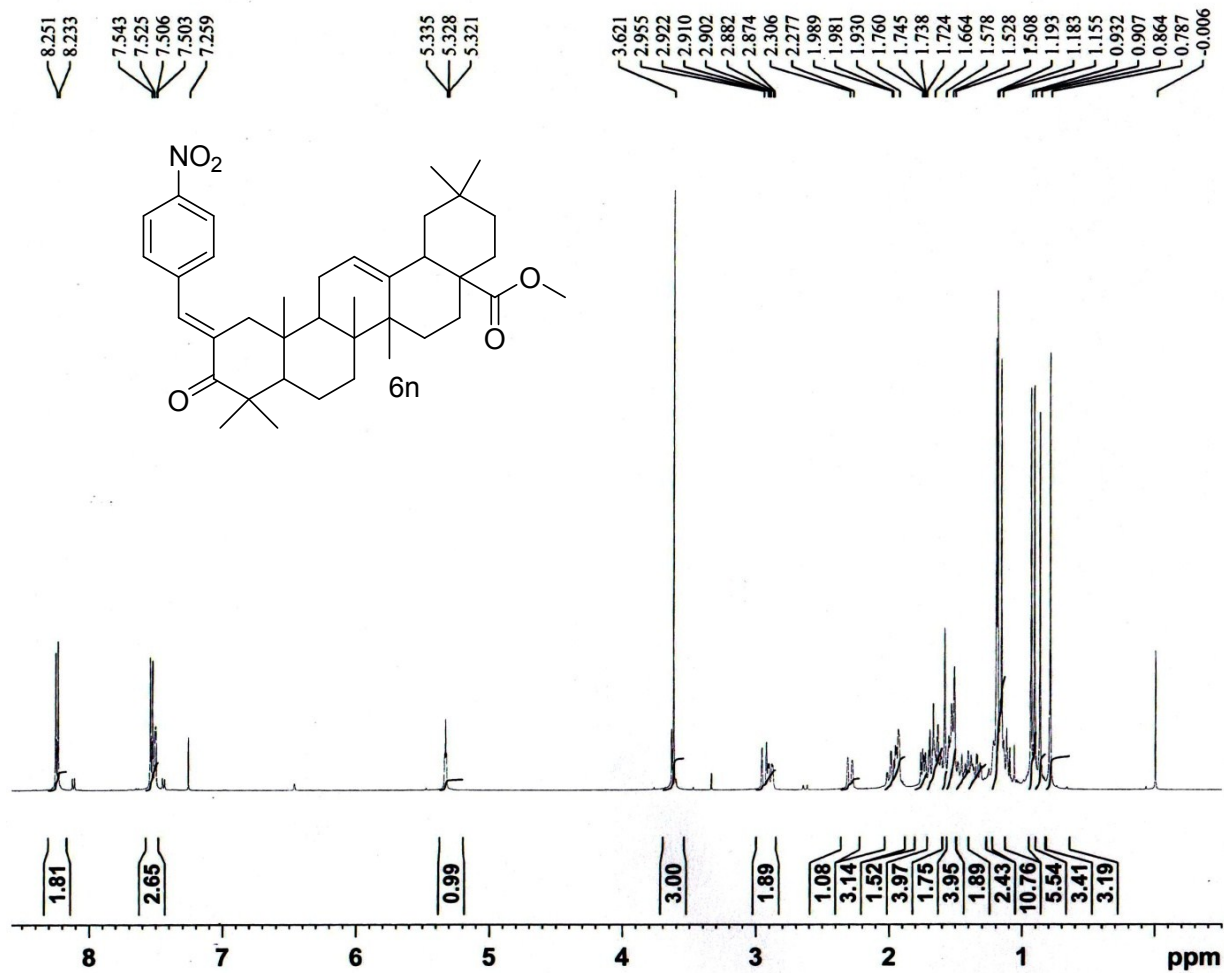
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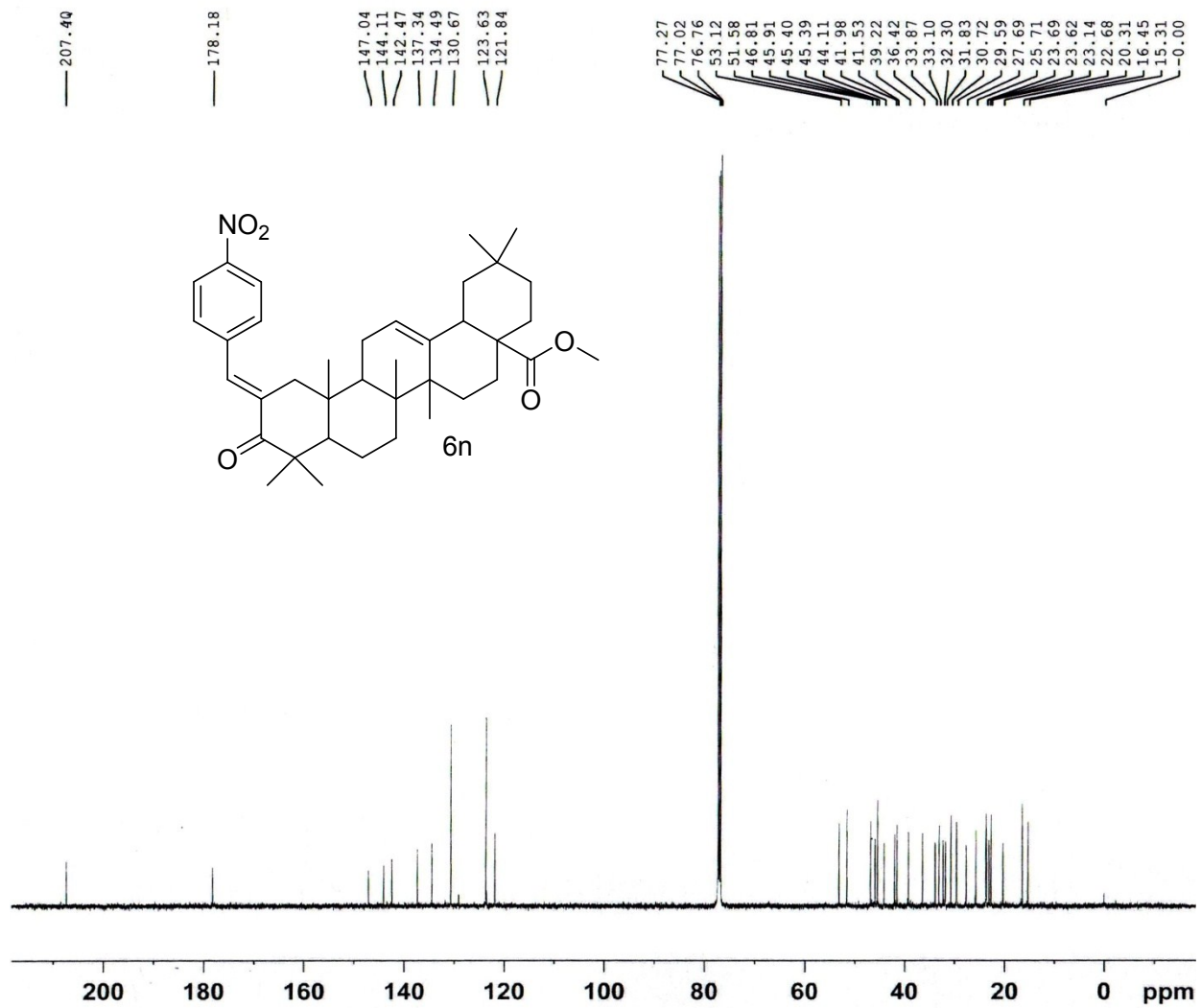




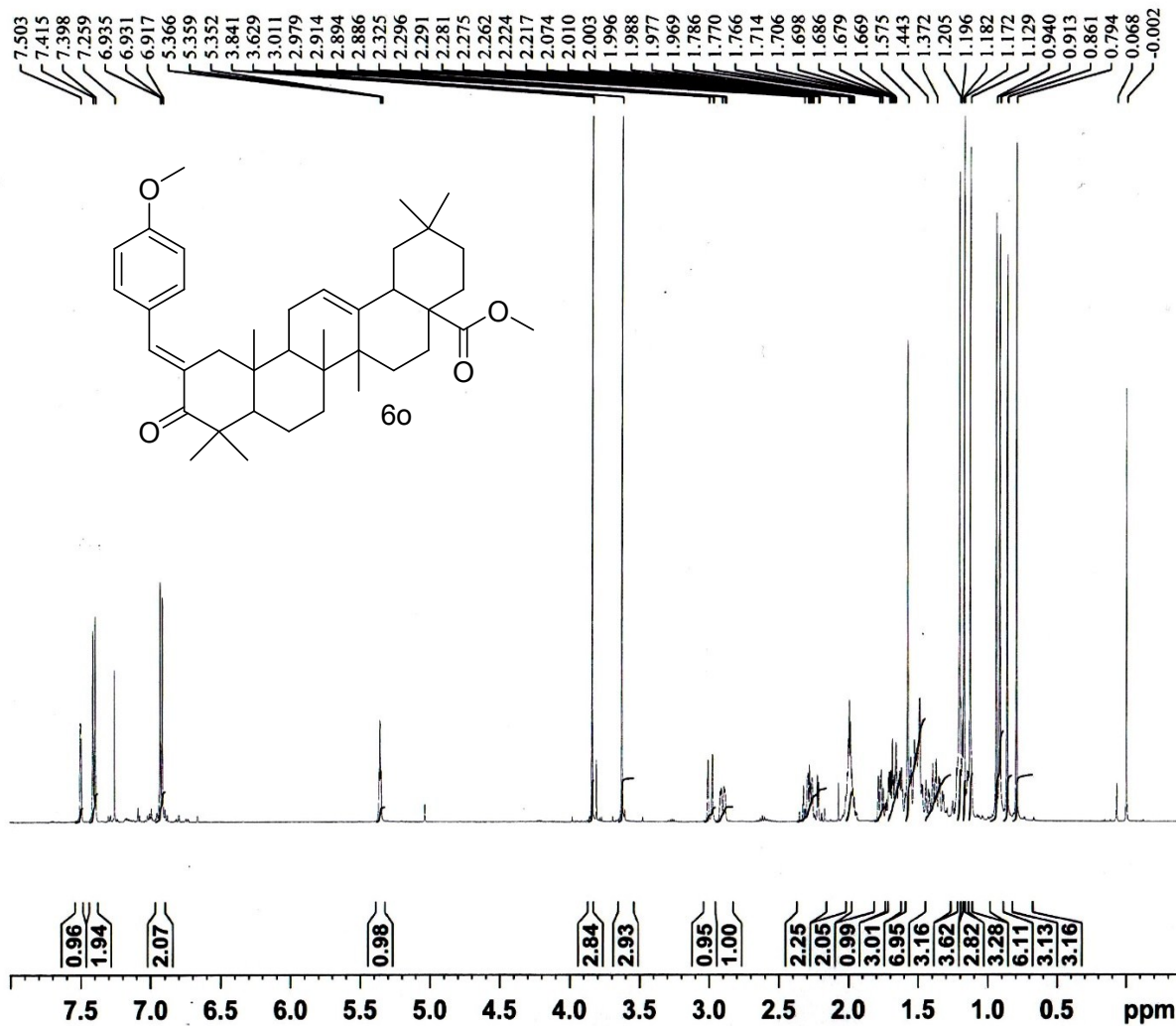


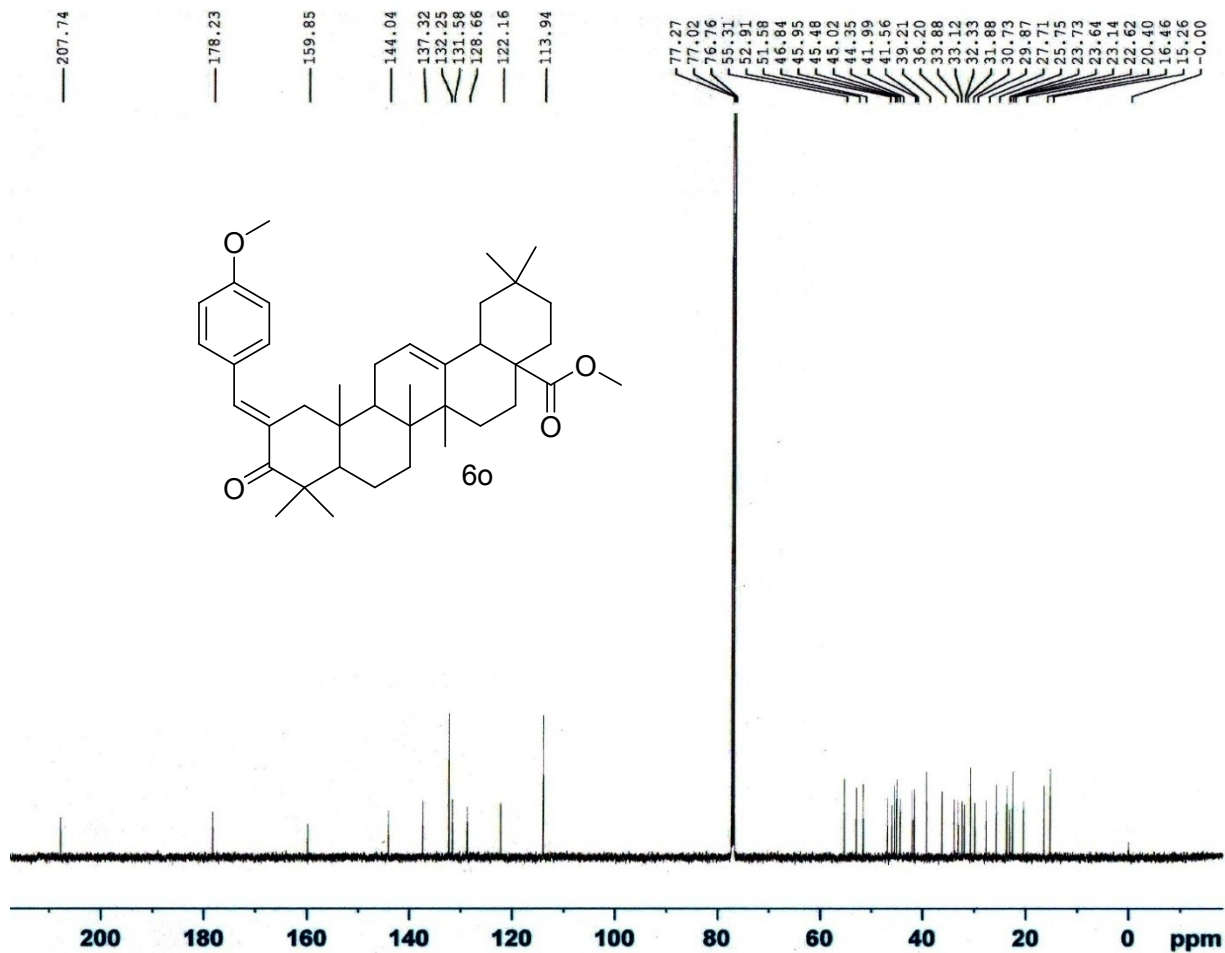
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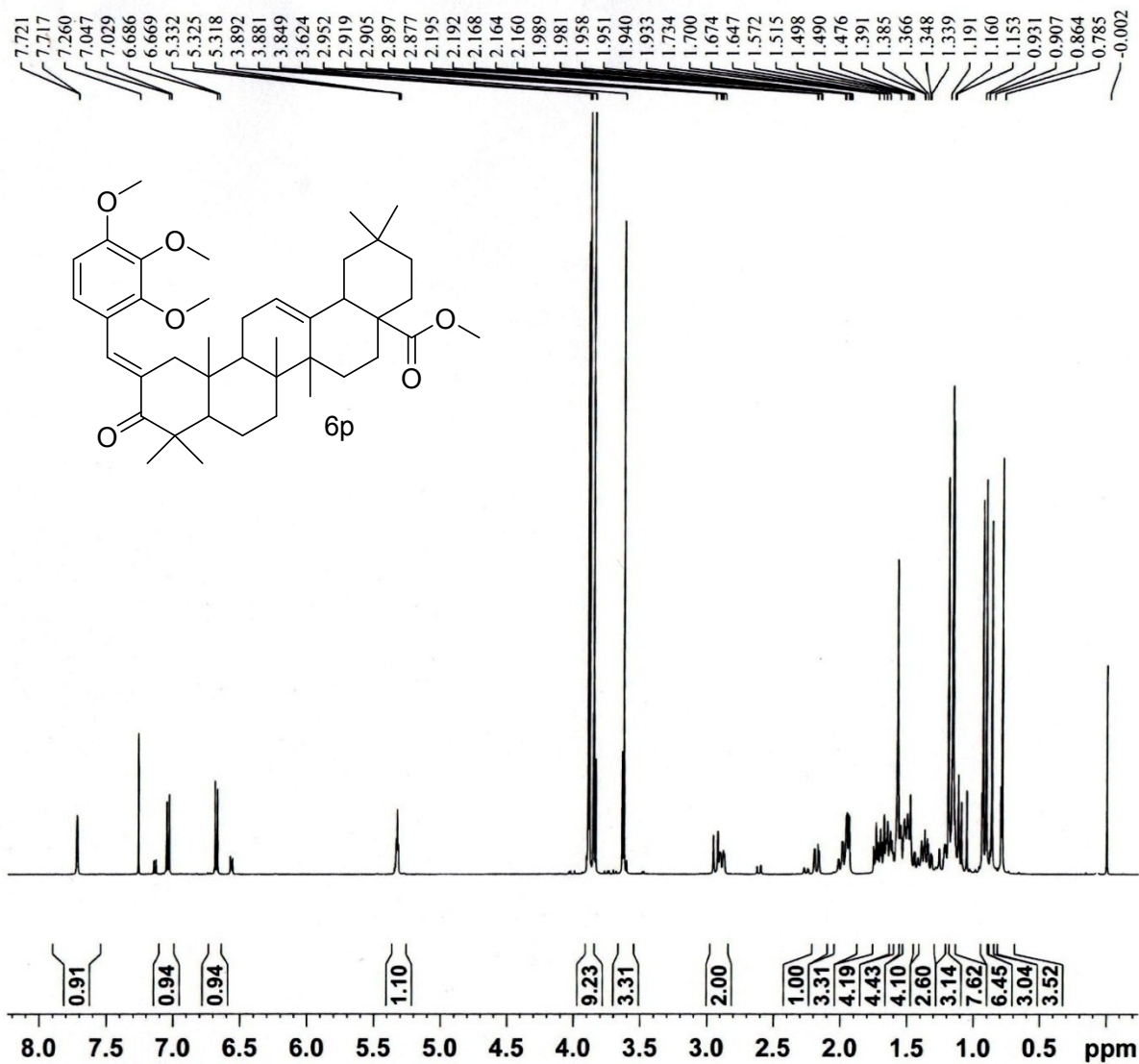


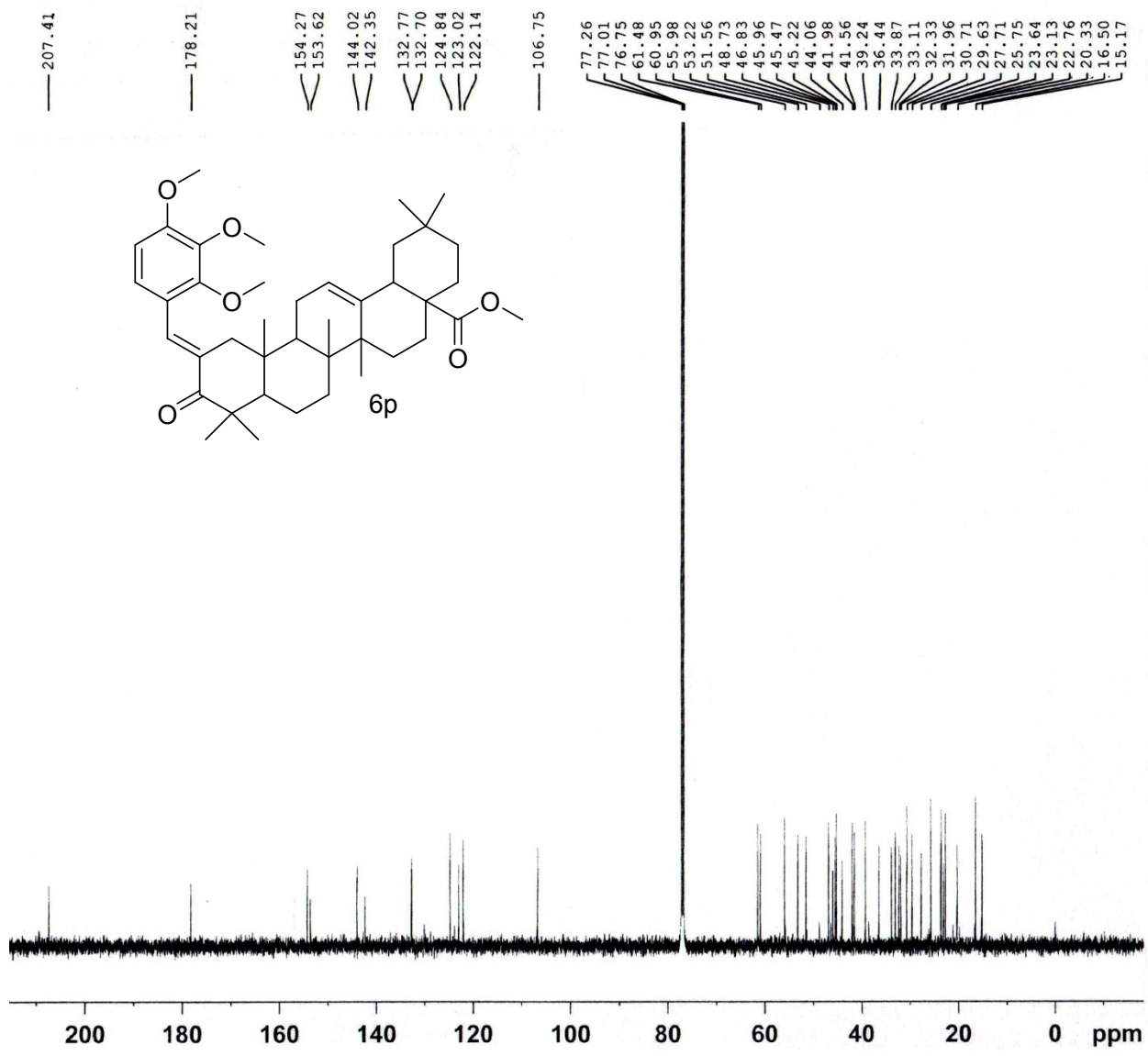
**(E)-methyl-11-(4-methoxybenzylidene)-2,2,6a,6b,9,9,12a-heptamethyl-10-oxo-1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,12b,13,14b-icosahdropicene-4a-carboxylate (60)**



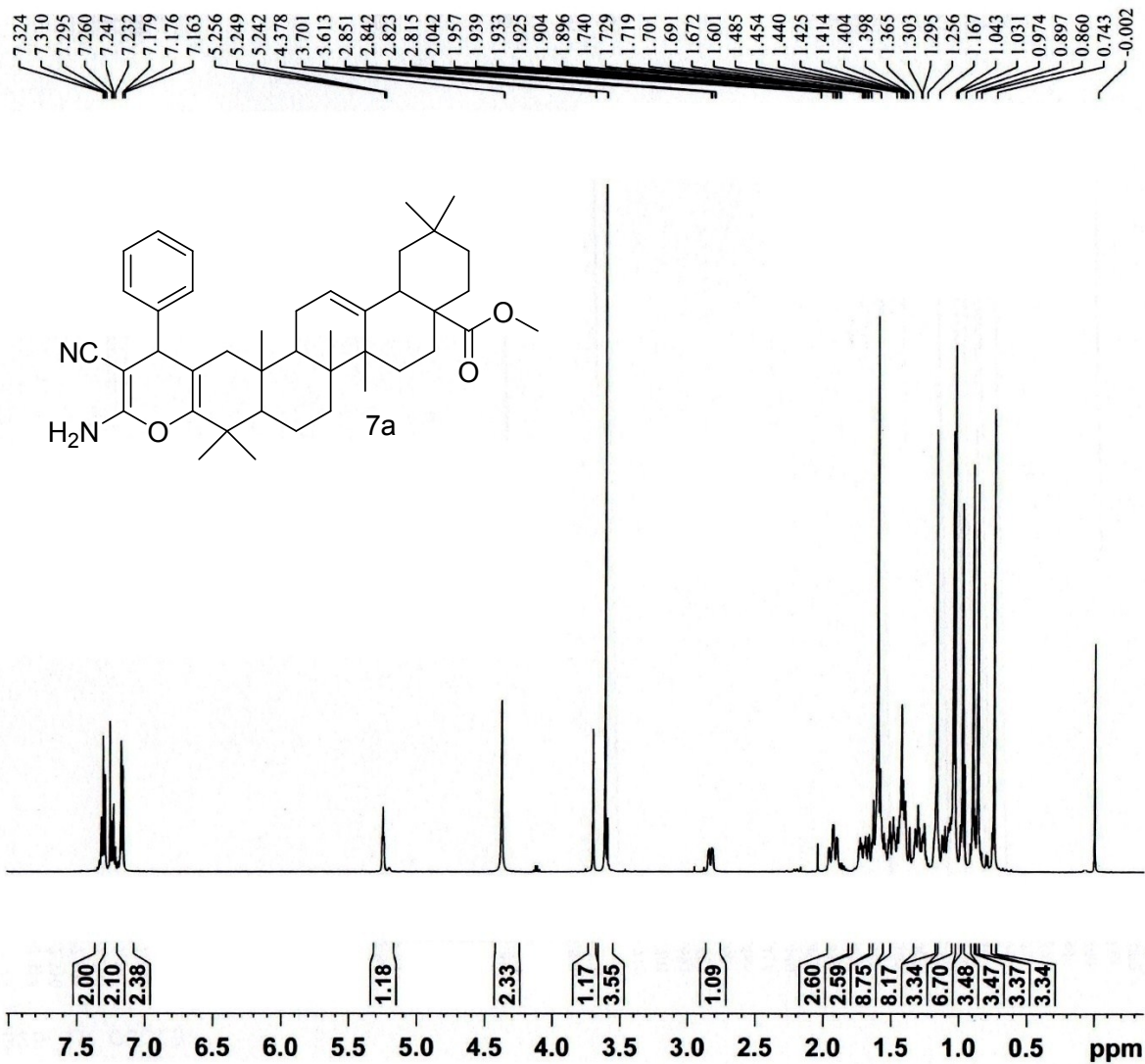


**(E)-methyl-2,2,6a,6b,9,9,12a-heptamethyl-10-oxo-11-(2,3,4-trimethoxybenzylidene)-1,2,3,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,12b,13,14b-icosahydricene-4a-carboxylate (6p)**

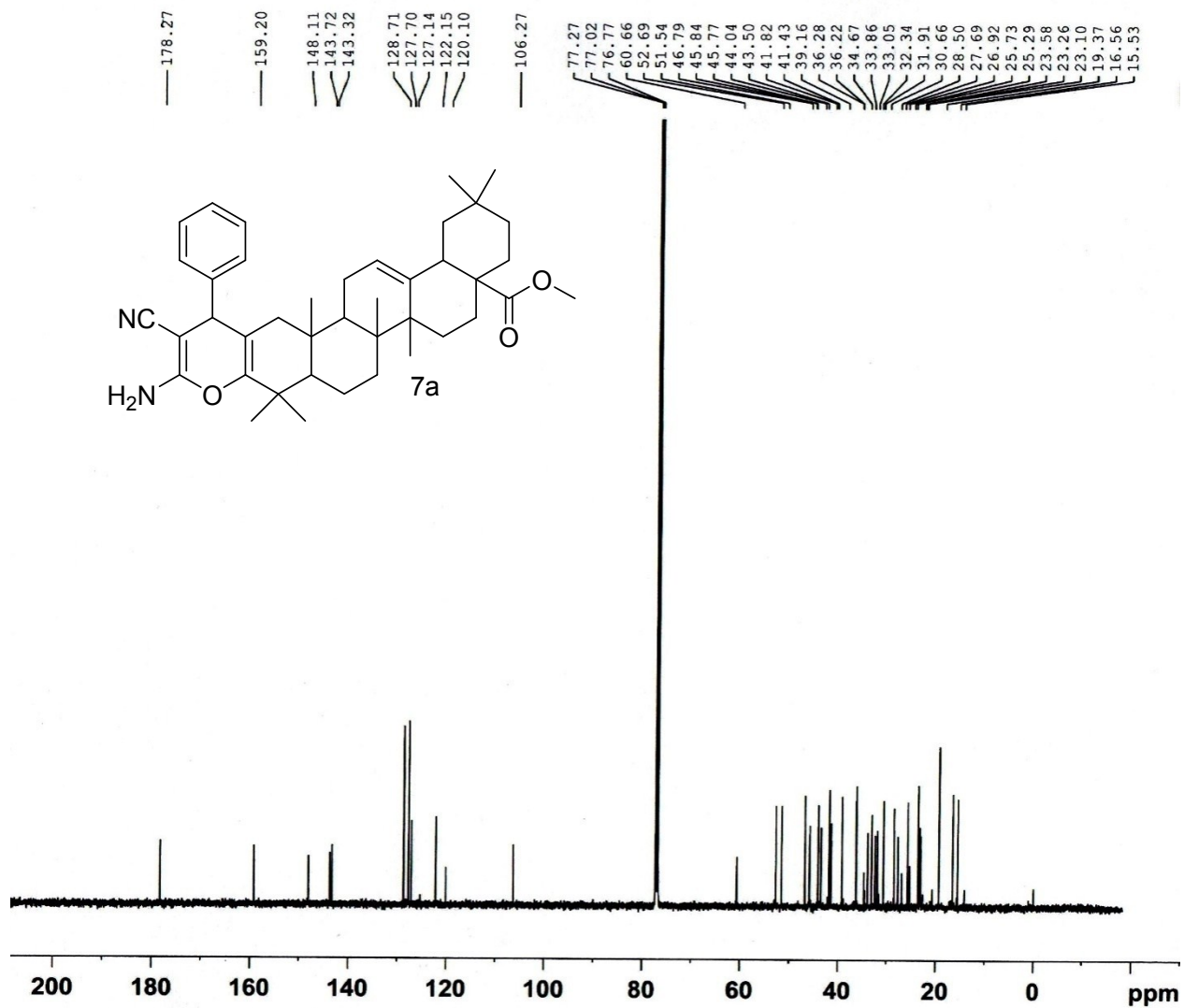




Methyl-11-amino-12-cyano-2,2,6a,6b,9,9,14a-heptamethyl-13-phenyl-2,3,4,4a,5,6,6a,6b,7,8,8a,9,13,14,14a,14b,15,16b-octadecahydro-1H-chryseno[1,2-g]chromene-4a-carboxylate (7a)



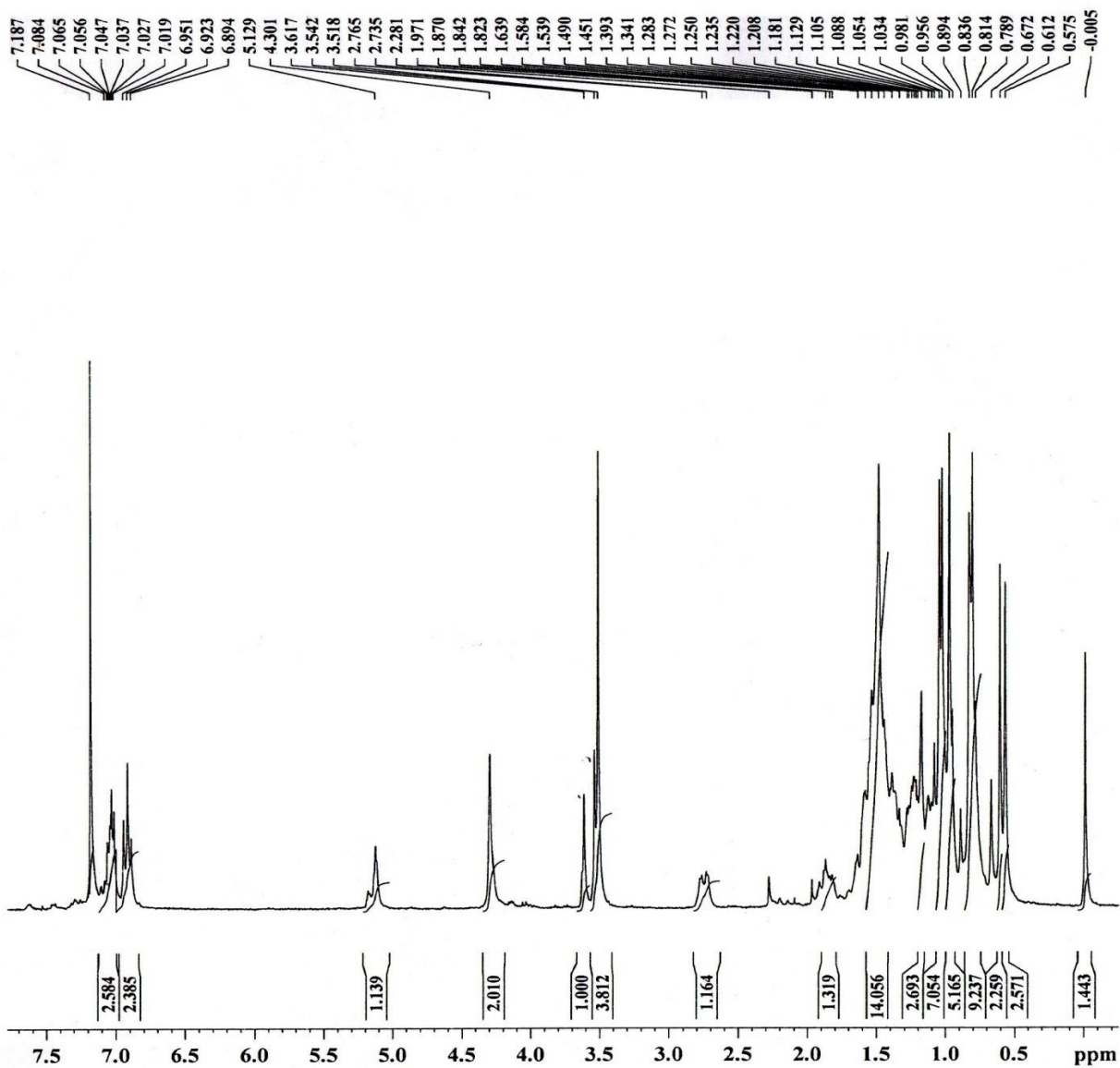


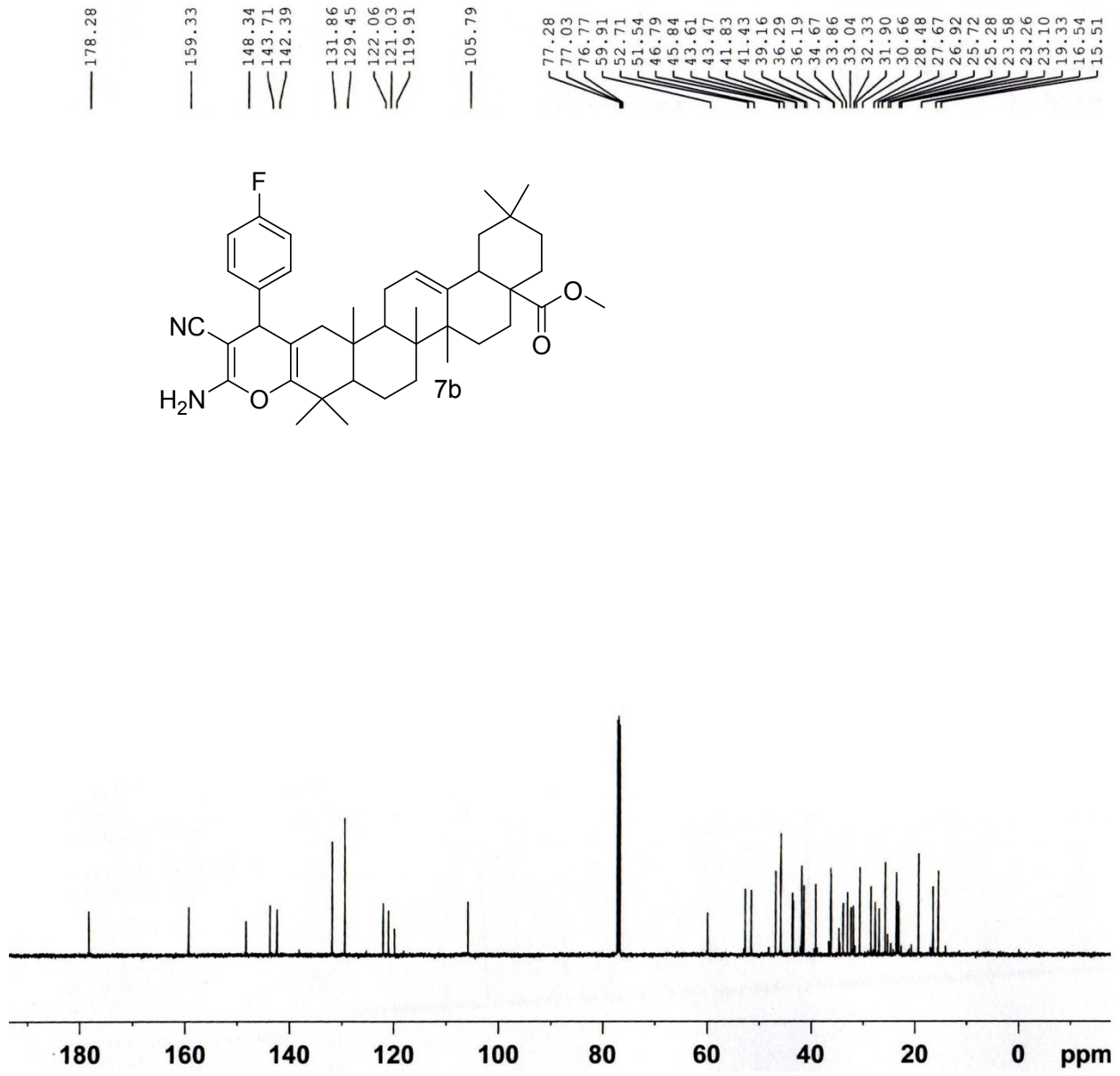


**Methyl-11-amino-12-cyano-13-(4-fluorophenyl)-2,2,6a,6b,9,9,14a-heptamethyl-2,3,4,4a,5,6,6a,6b,7,8,8a,9,13,14,14a,14b,15,16b-octadecahydro-1H-chryseno[1,2-**

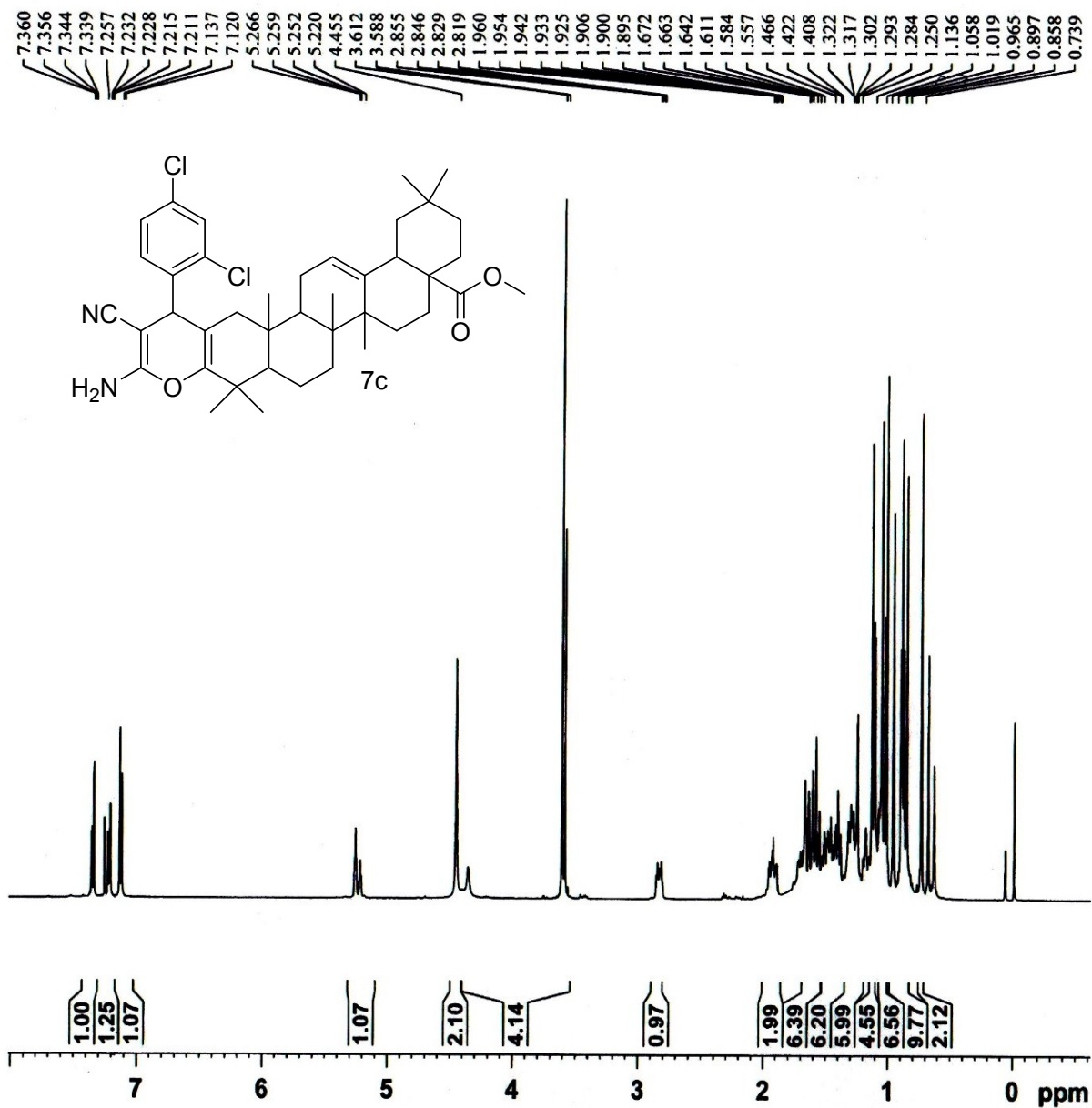


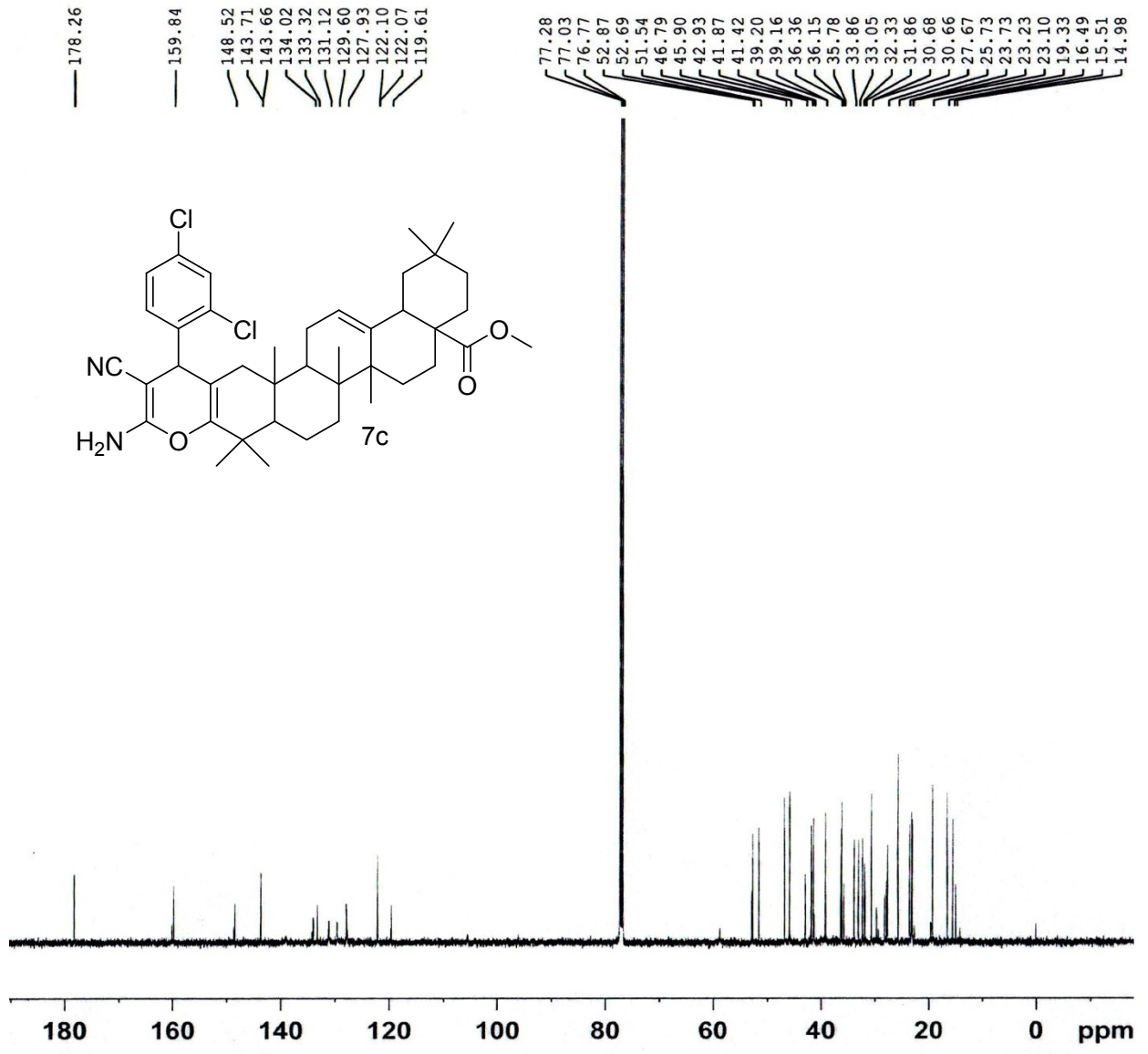
g]chromene-4a-carboxylate(7b)



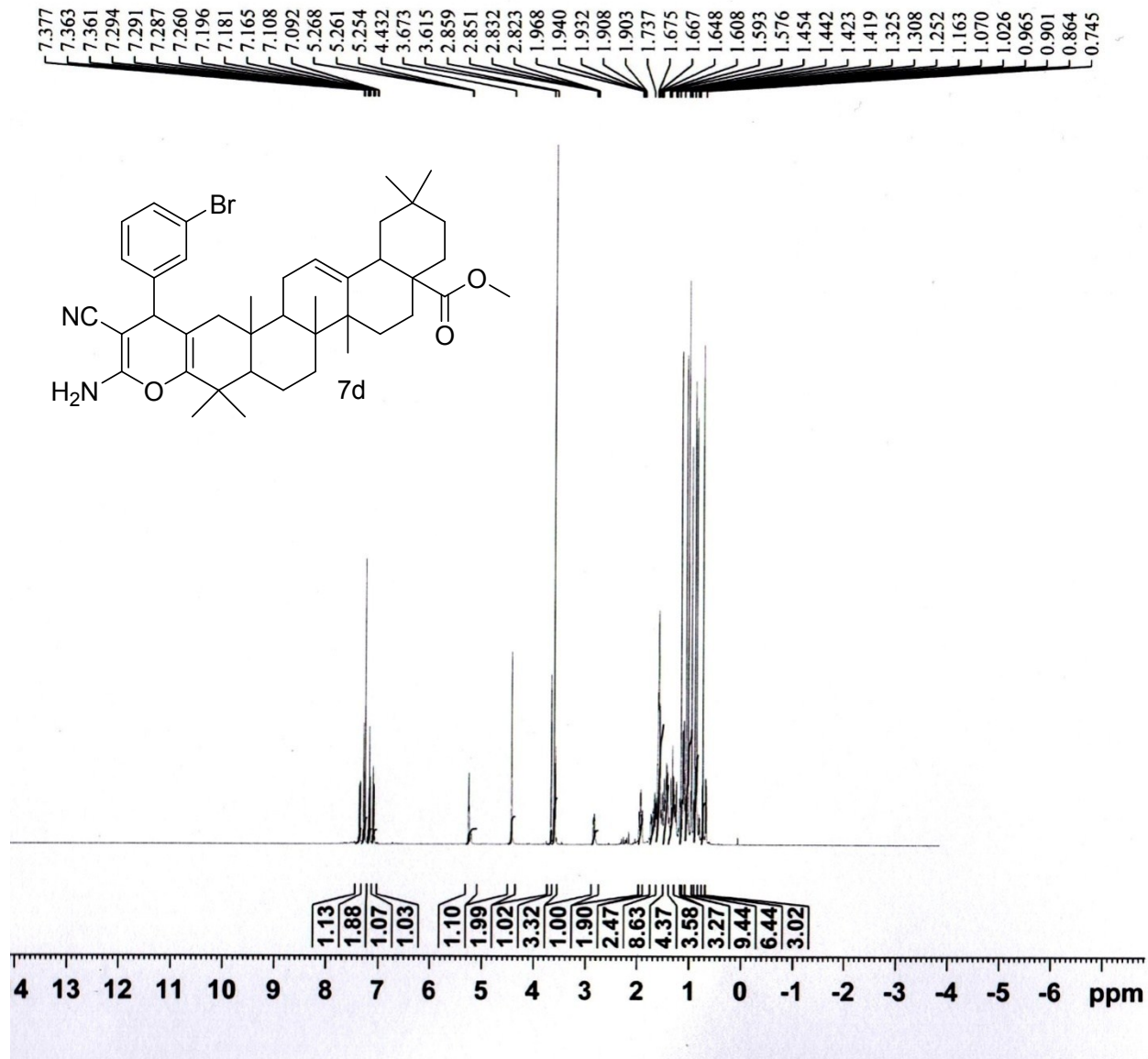


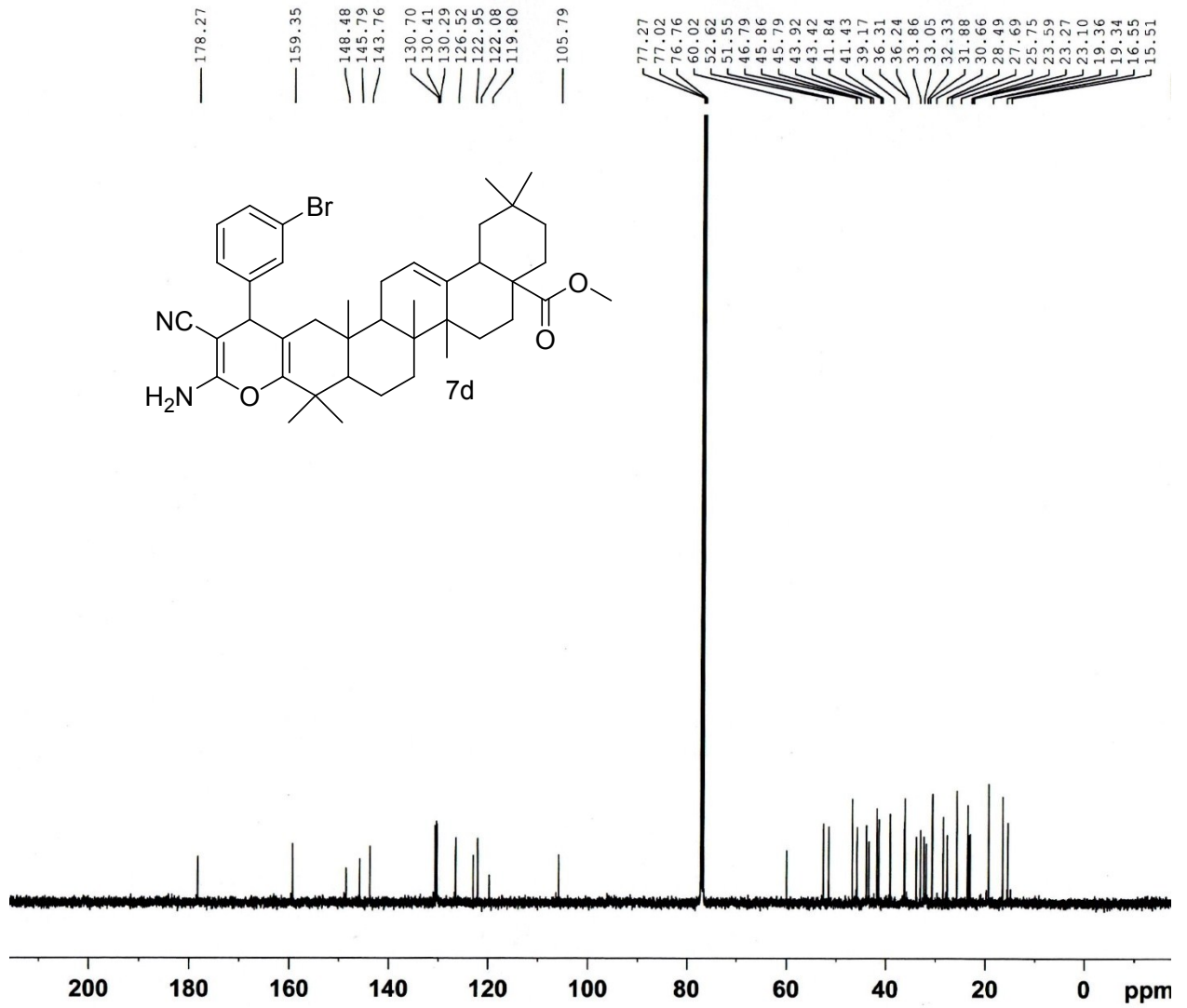
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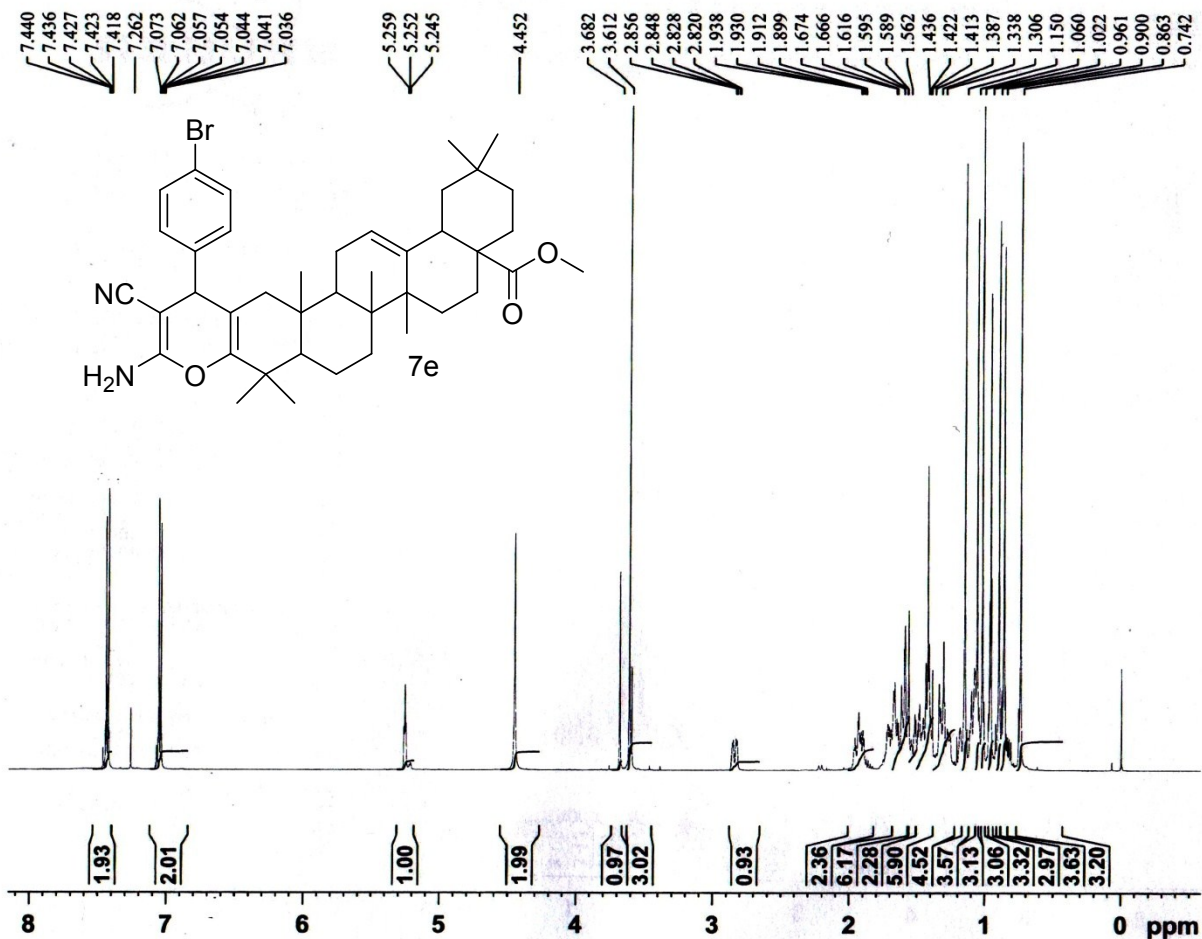


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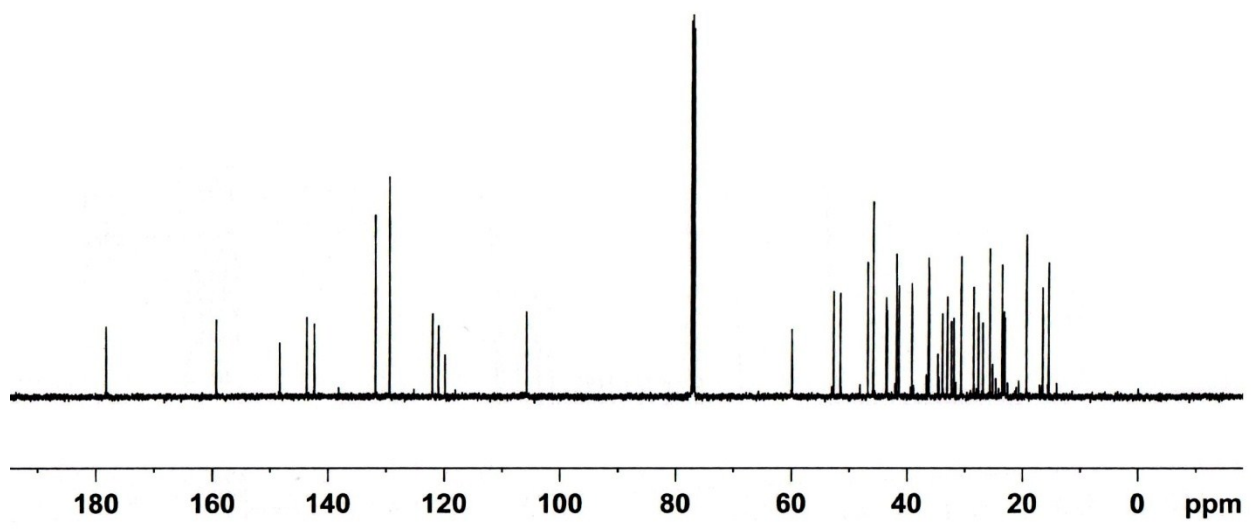
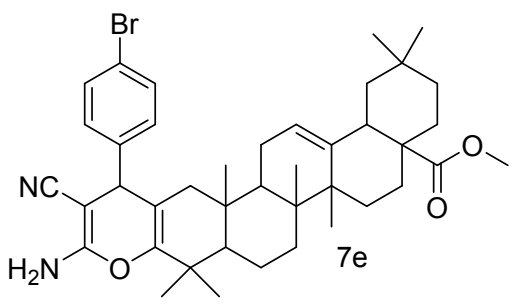
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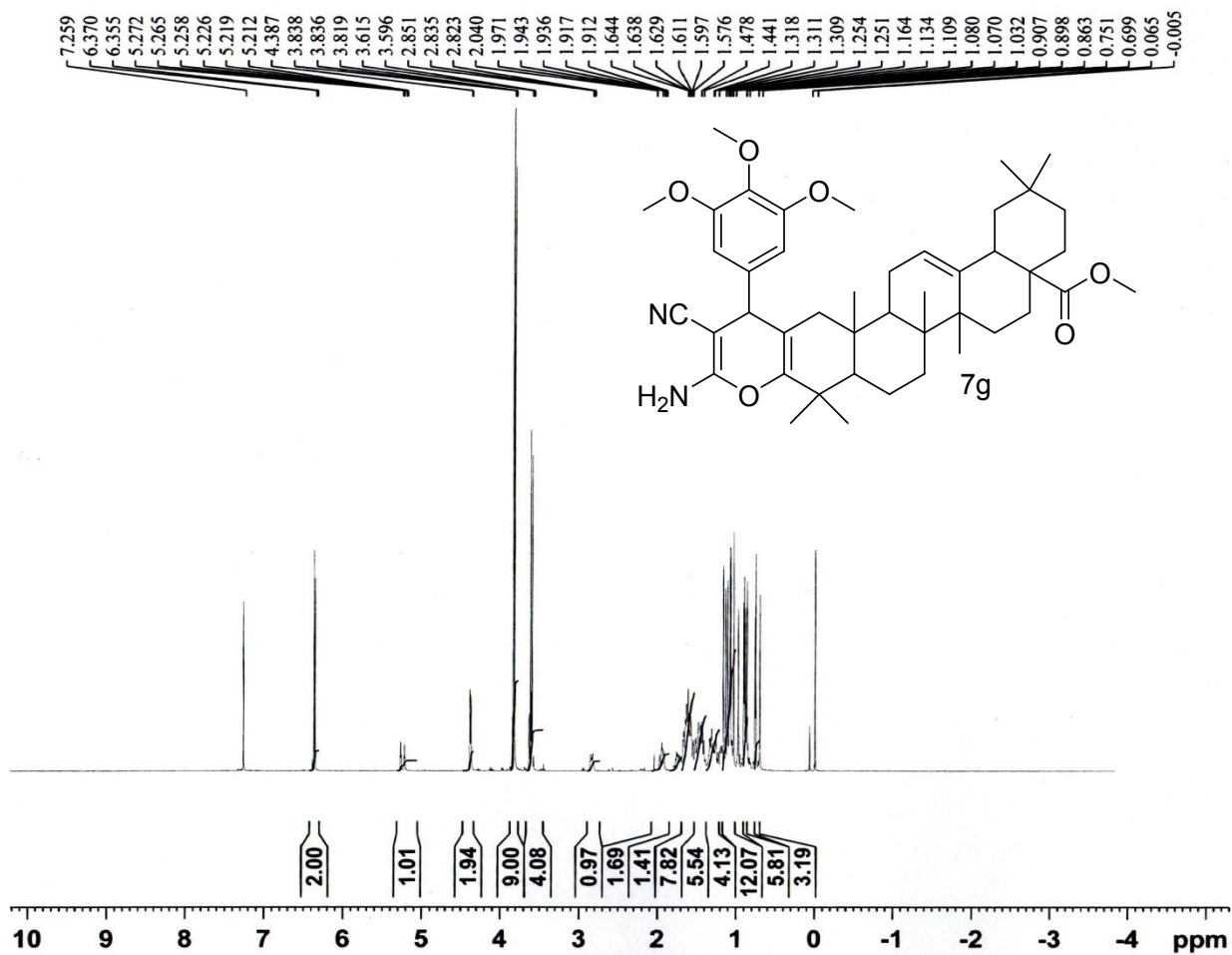
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 — 159.33  
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 — 122.06  
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 — 119.91  
 — 105.79

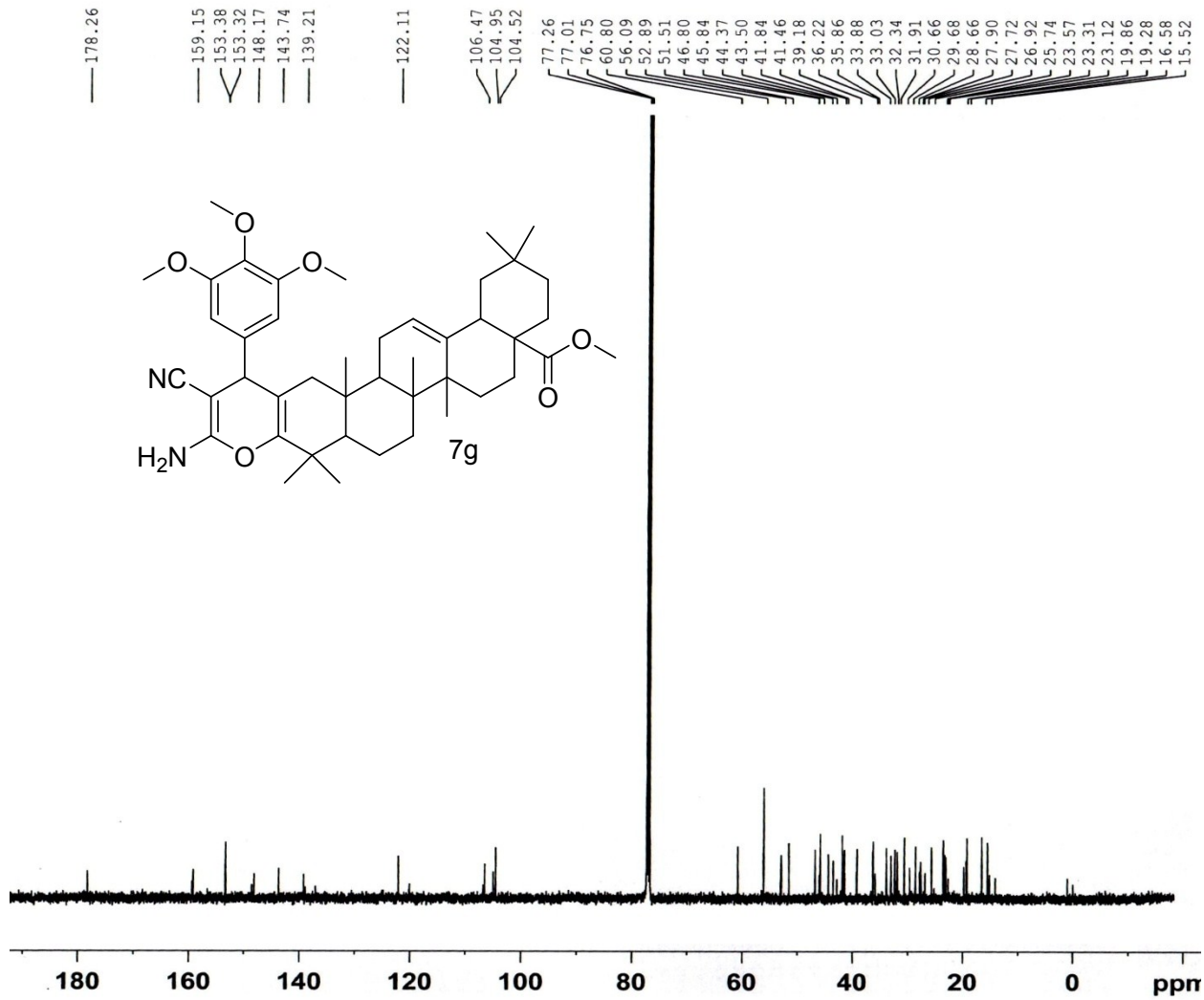
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 15.51



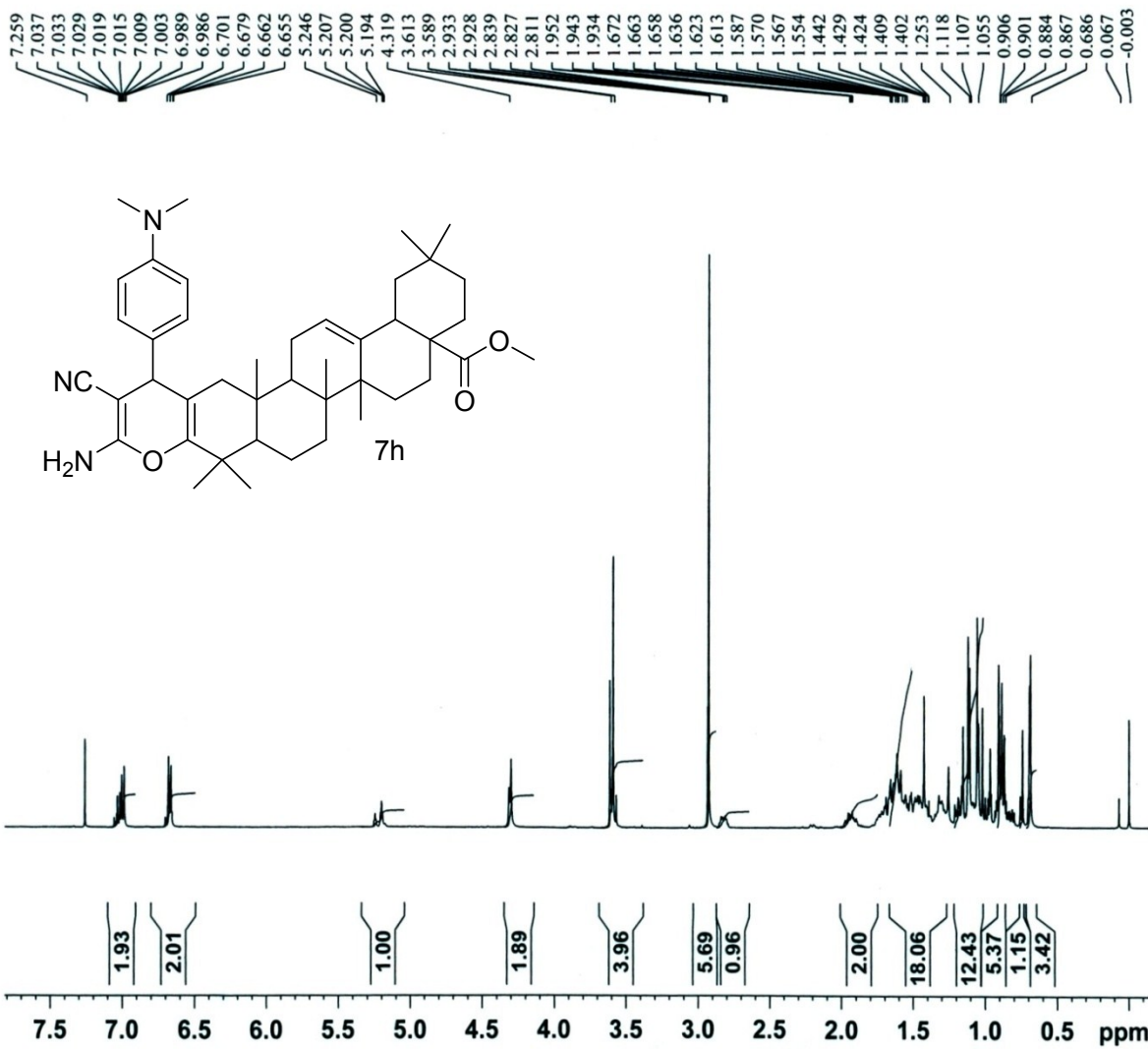


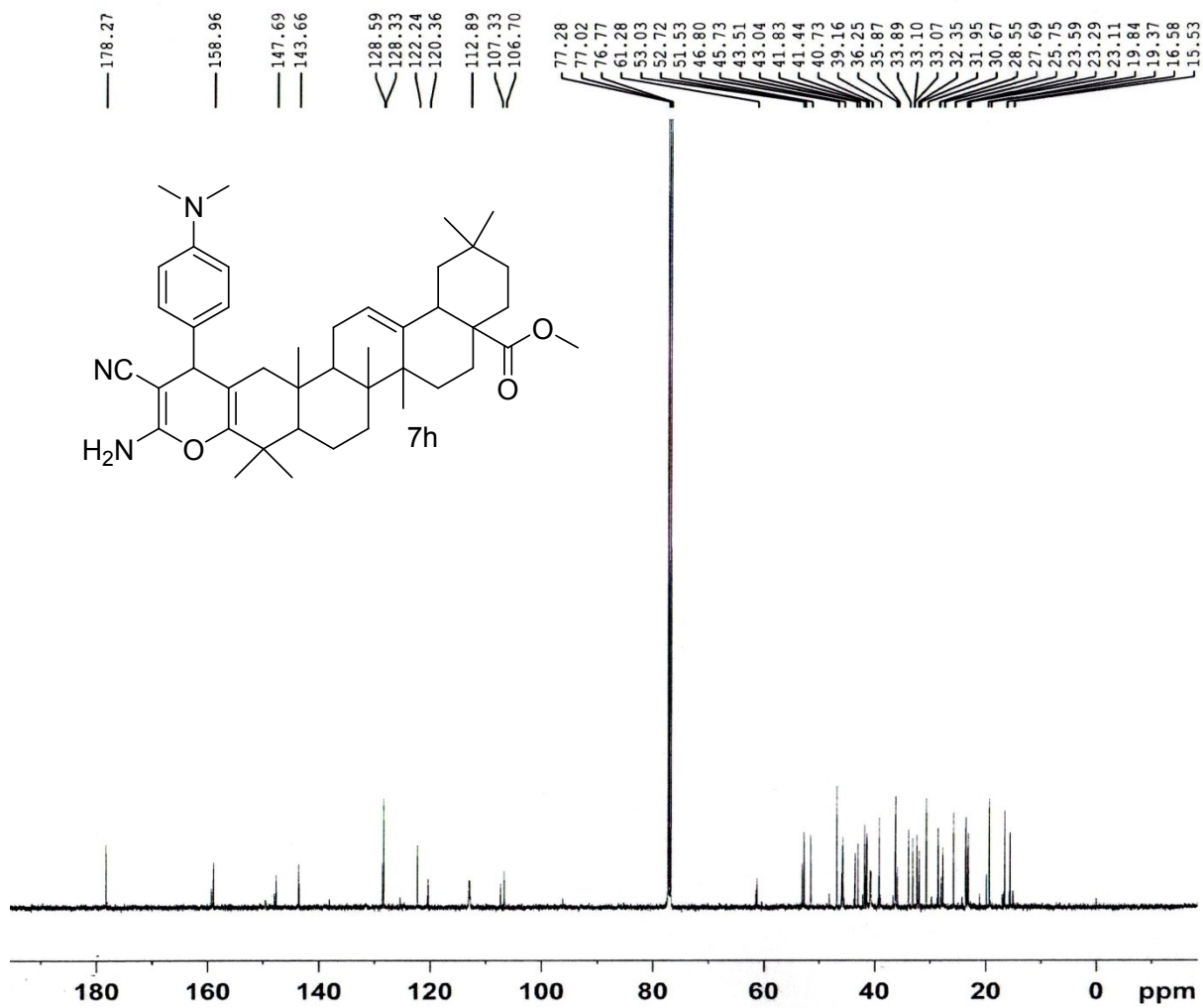
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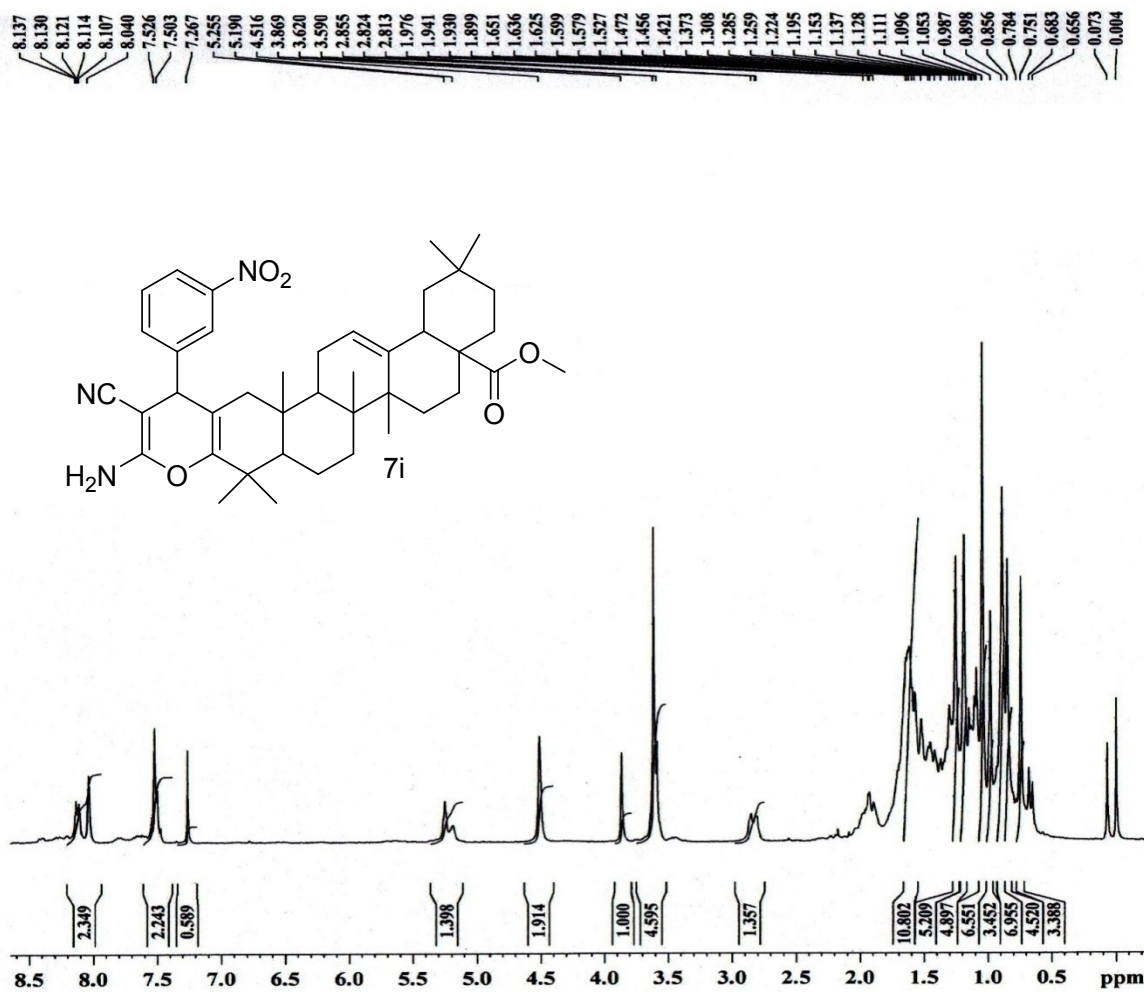


**Methyl-11-amino-12-cyano-13-(4-(dimethylamino)phenyl)-2,2,6a,6b,9,9,14a-heptamethyl-2,3,4,4a,5,6,6a,6b,7,8,8a,9,13,14,14a,14b,15,16b-octadecahydro-1H-chryseno[1,2-g]chromene-4a-carboxylate (7h)**



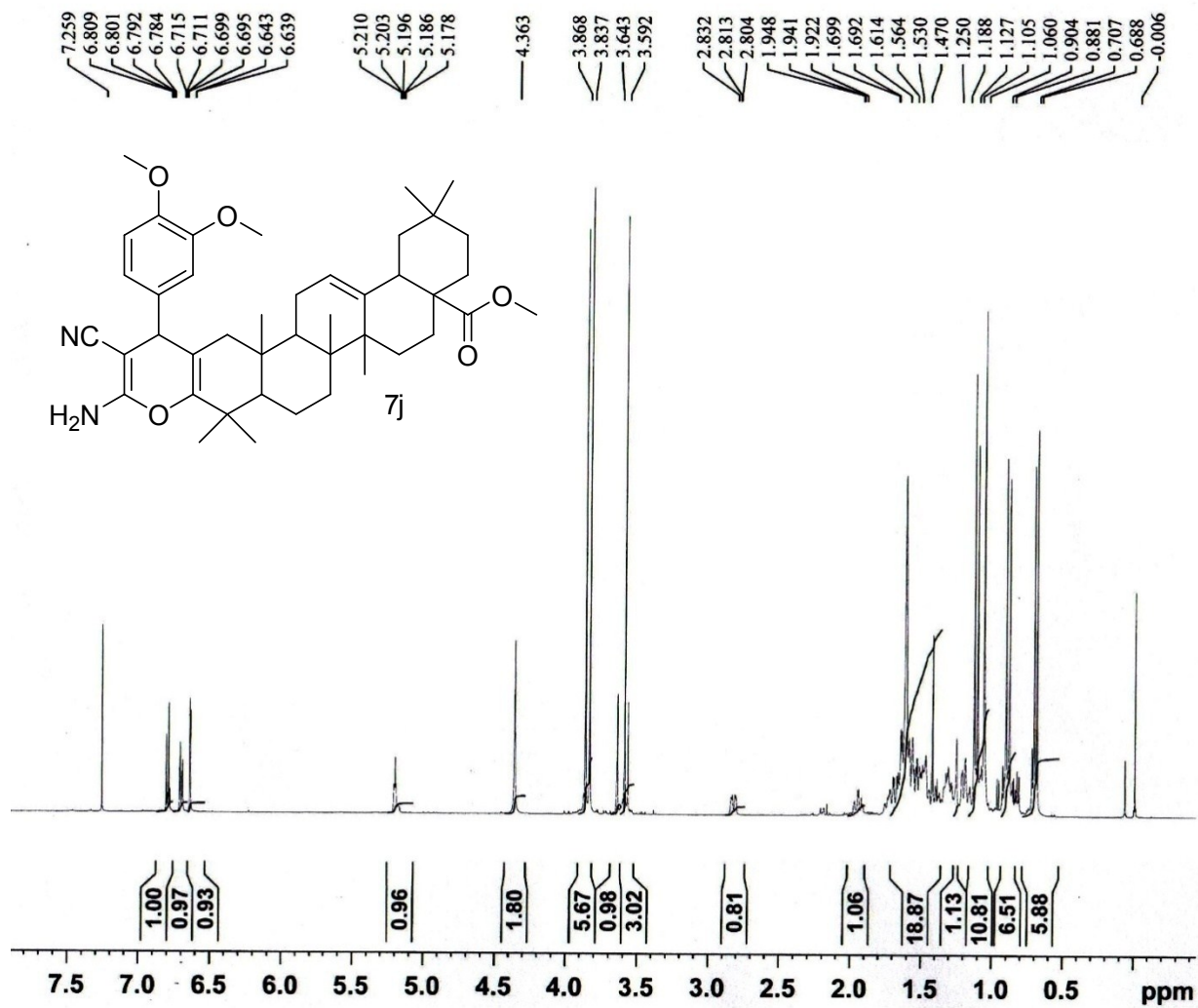


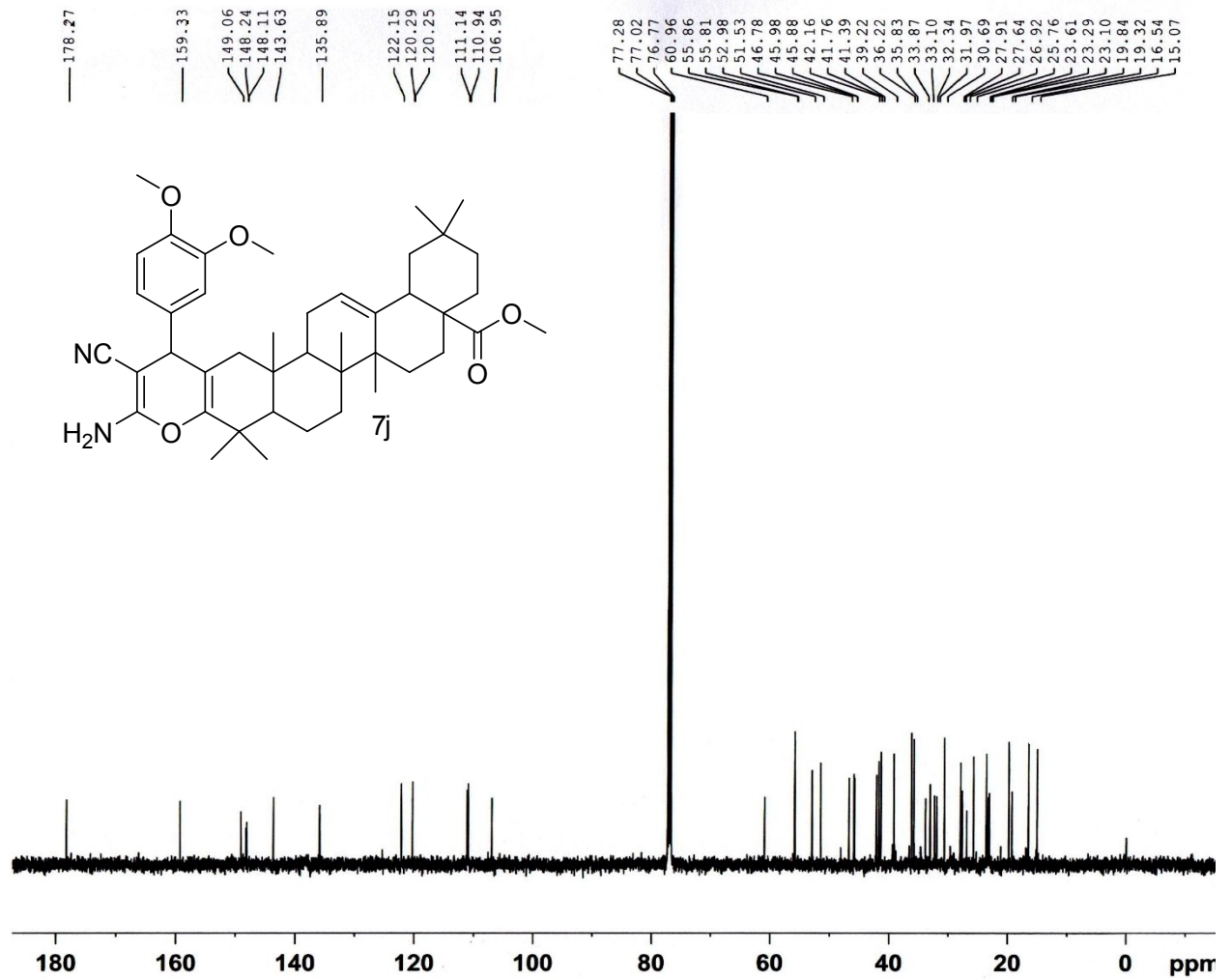
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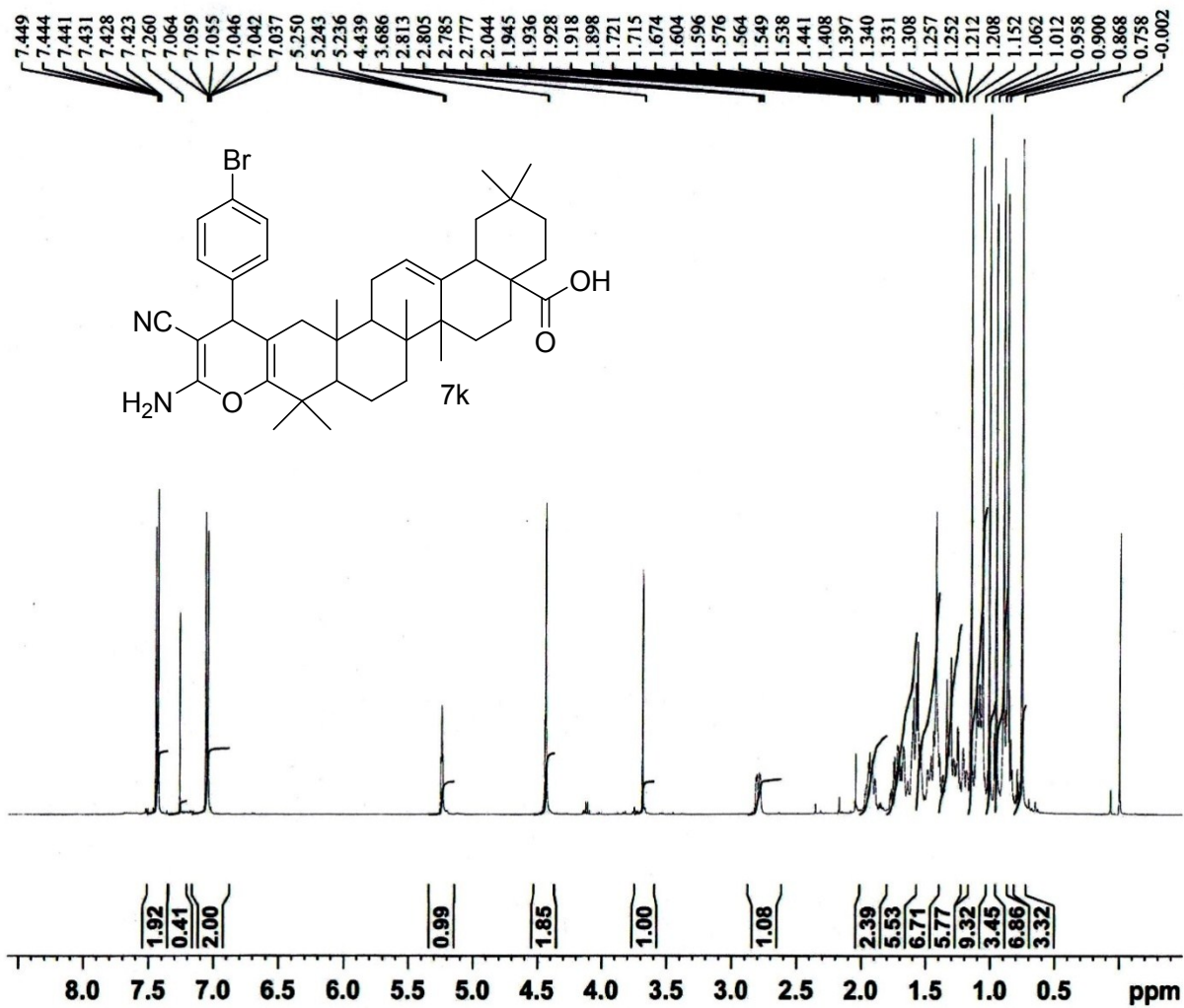
**Methyl-11-amino-12-cyano-13-(3,4-dimethoxyphenyl)-2,2,6a,6b,9,9,14a-heptamethyl-2,3,4,4a,5,6,6a,6b,7,8,8a,9,13,14,14a,14b,15,16b-octadecahydro-1H-chryseno[1,2-g]chromene-4a-carboxylate (7j)**

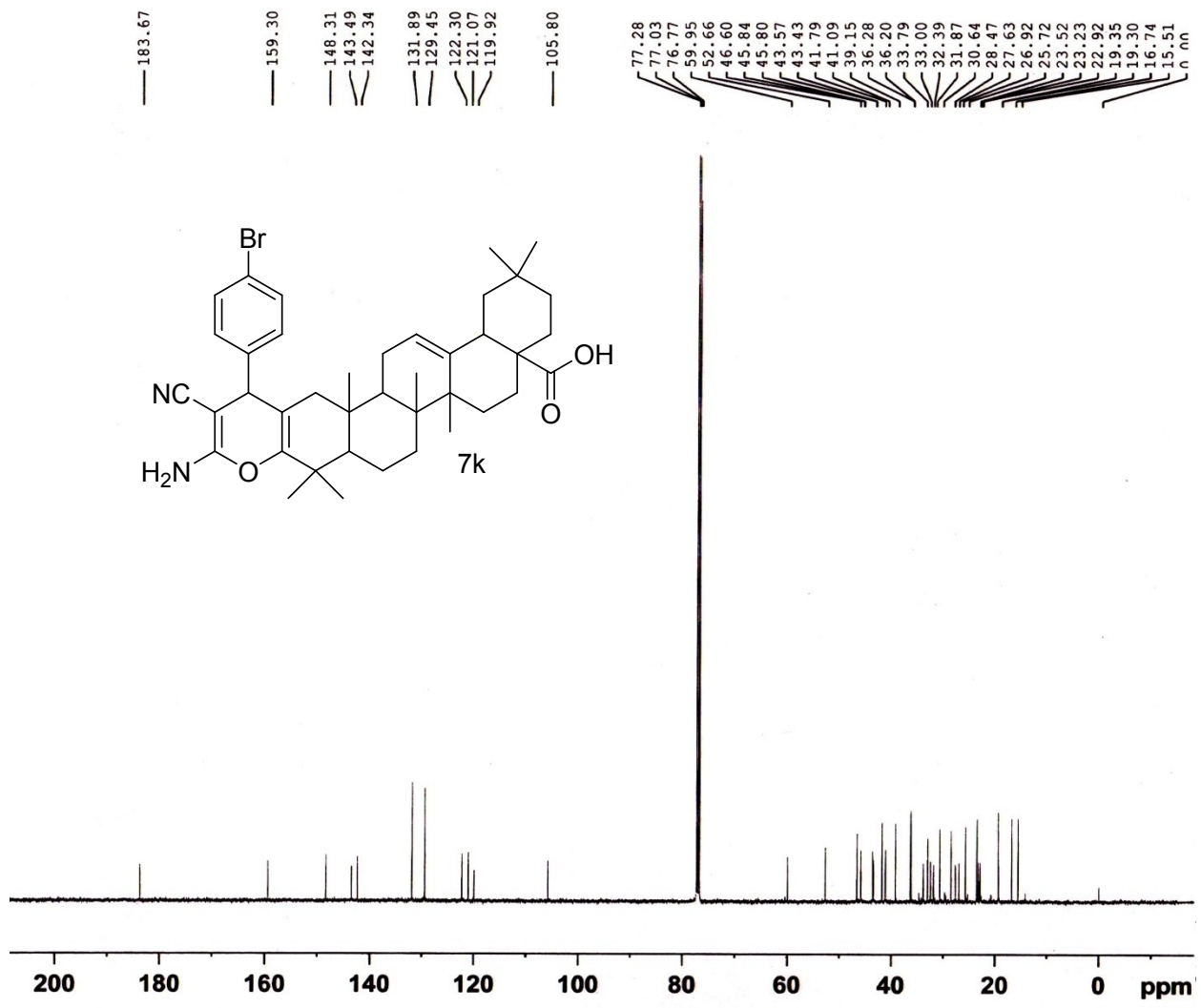






**11-amino-12-cyano-13-(4-bromophenyl)-2,2,6a,6b,9,9,14a-heptamethyl-2,3,4,4a,5,6,6a,6b,7,8,8a,9,13,14,14a,14b,15,16b-octadecahydro-1H-chryseno[1,2-g]chromene-4a-carboxylic acid(7k)**





**11-amino-12-cyano-2,2,6a,6b,9,9,14a-heptamethyl-13-(3,4,5-trimethoxyphenyl)-2,3,4,4a,5,6,6a,6b,7,8,8a,9,13,14,14a,14b,15,16b-octadecahydro-1H-chryseno[1,2-g]chromene-4a-carboxylic acid (71)**

