

**Green synthesis of new adamantane-containing dihydropyrimidine derivatives as
potential anticancer agents**

Adeleh Moshtaghi Zonouz^{a*}, Mina Abkar Aras^a, Nahideh Jafari^b, Zahra Rezaei^a, Hamed Hamishehkar^{c*}

^a*Department of Chemistry, Faculty of Science, Azarbaijan Shahid Madani University, Tabriz- Iran.*

^b*Faculty of Chemical and Petroleum Engineering, University of Tabriz, Tabriz, Iran*

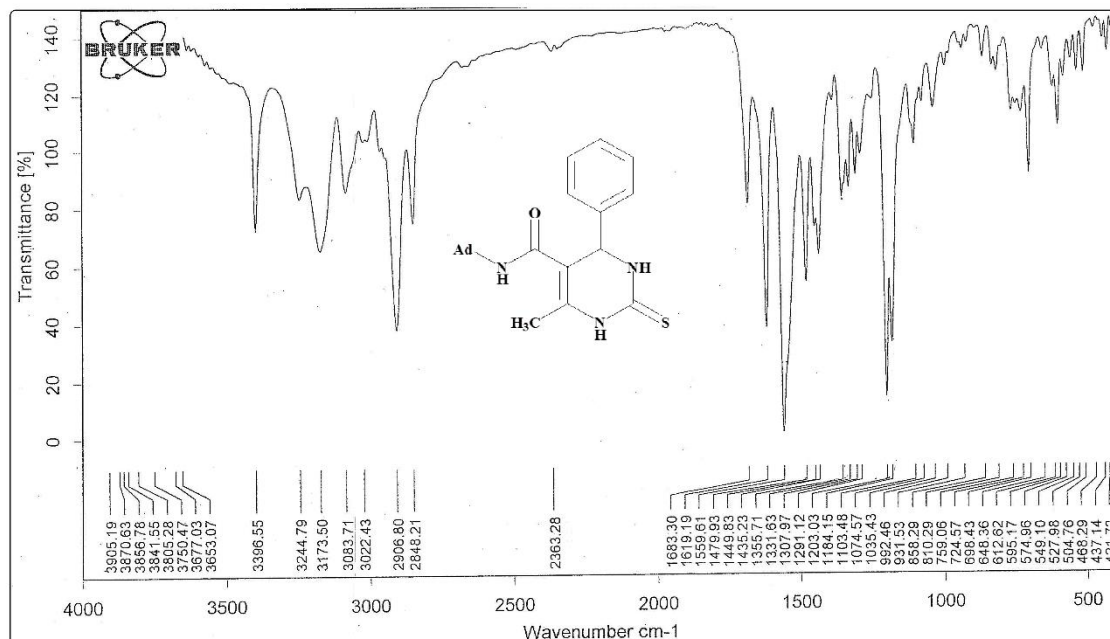
^c*Drug Applied Research Center, Tabriz University of Medical Sciences, Tabriz, Iran.*

Corresponding authors:

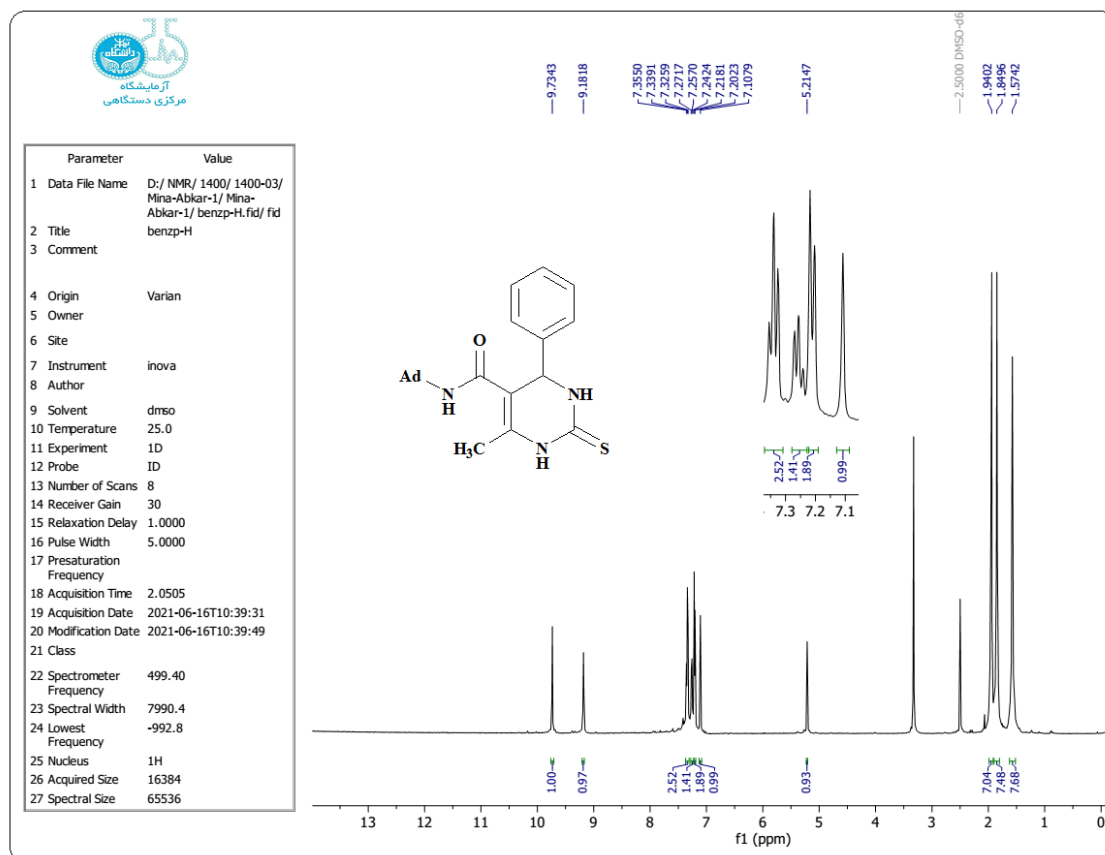
Adeleh Moshtaghi Zonouz: adelehmz@yahoo.com.

Hamed Hamishehkar: hamishehkarh@tbzmed.ac.ir; Hamishehkar.hamed@gmail.com.

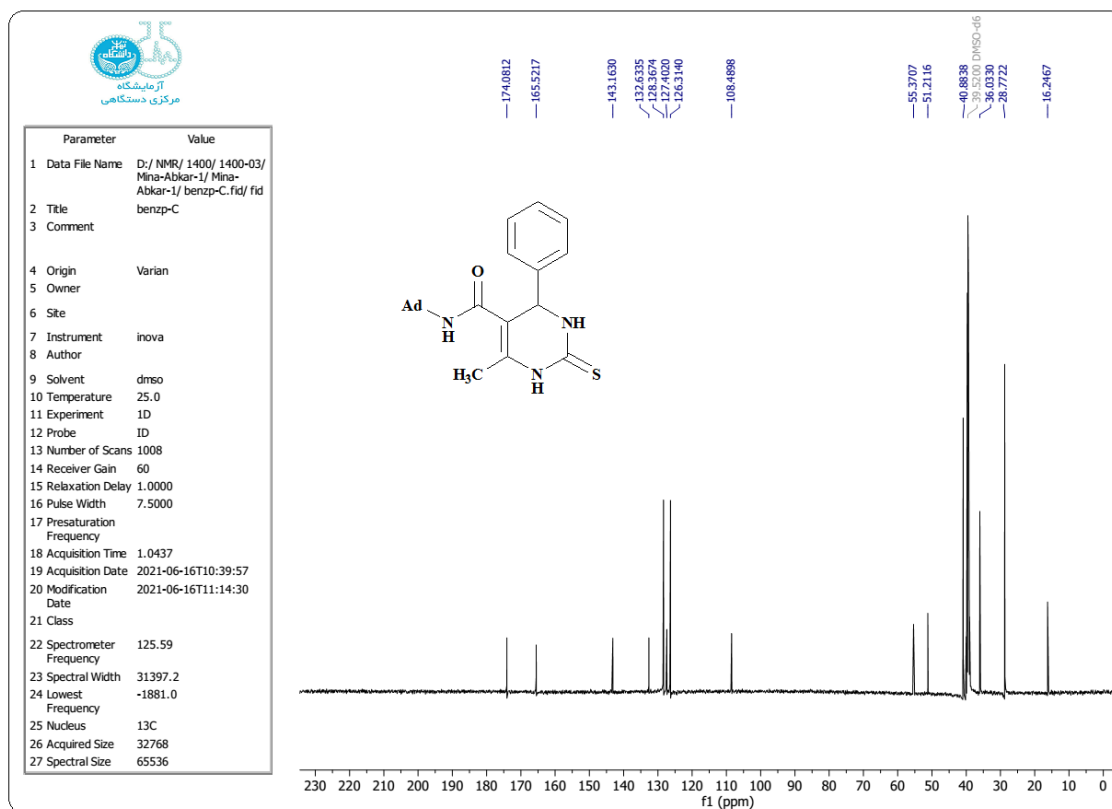
FTIR 5-(1-adamantylcarbamoyl) –6-methyl-4-phenyl-3,4-dihydropyrimidin-2(1H)-thione [IIa]



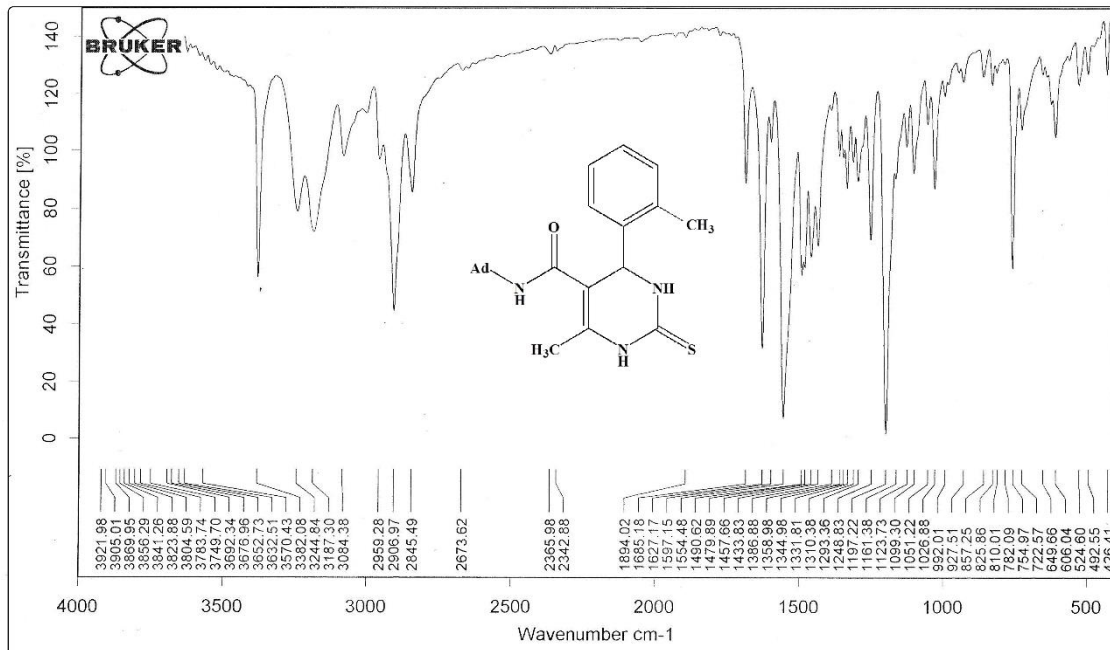
¹HNMR of 5-(1-adamantylcarbamoyl) –6-methyl-4-phenyl-3,4-dihydropyrimidin-2(1H)-thione [IIa]



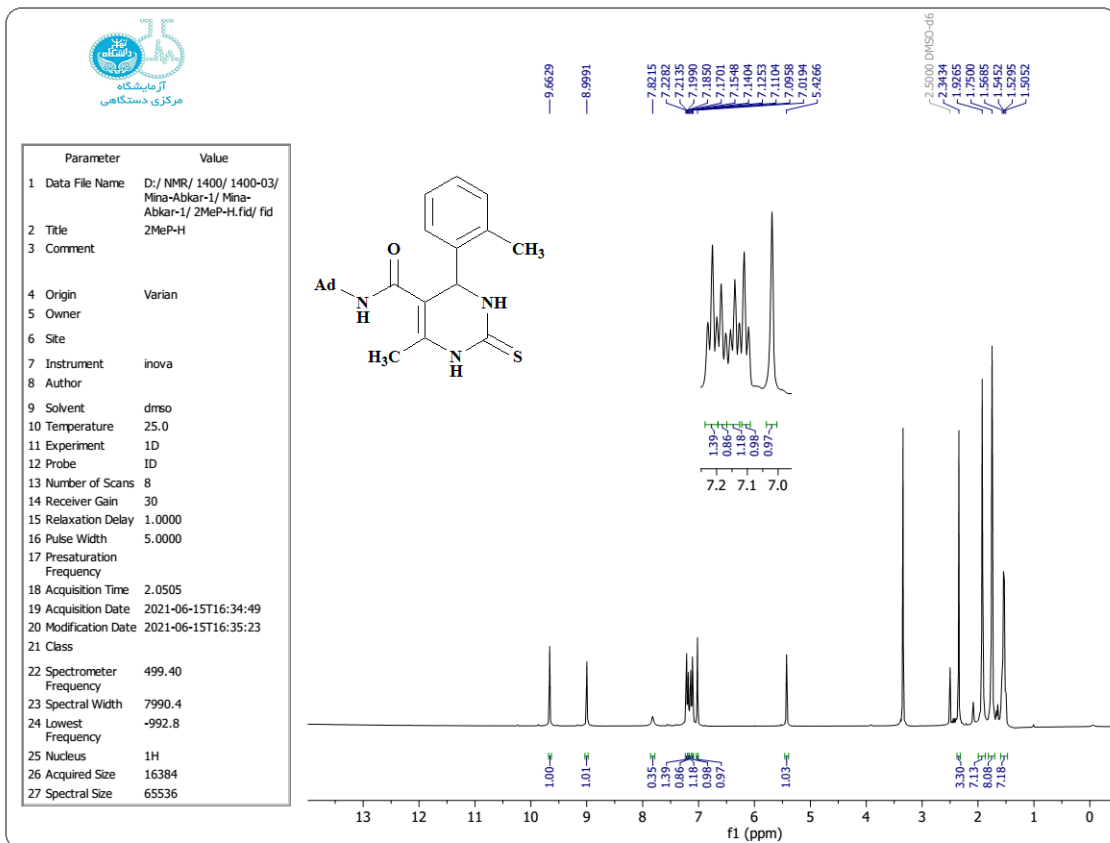
¹³CNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-phenyl-3,4-dihydropyrimidin-2(1H)-thione [IIa]



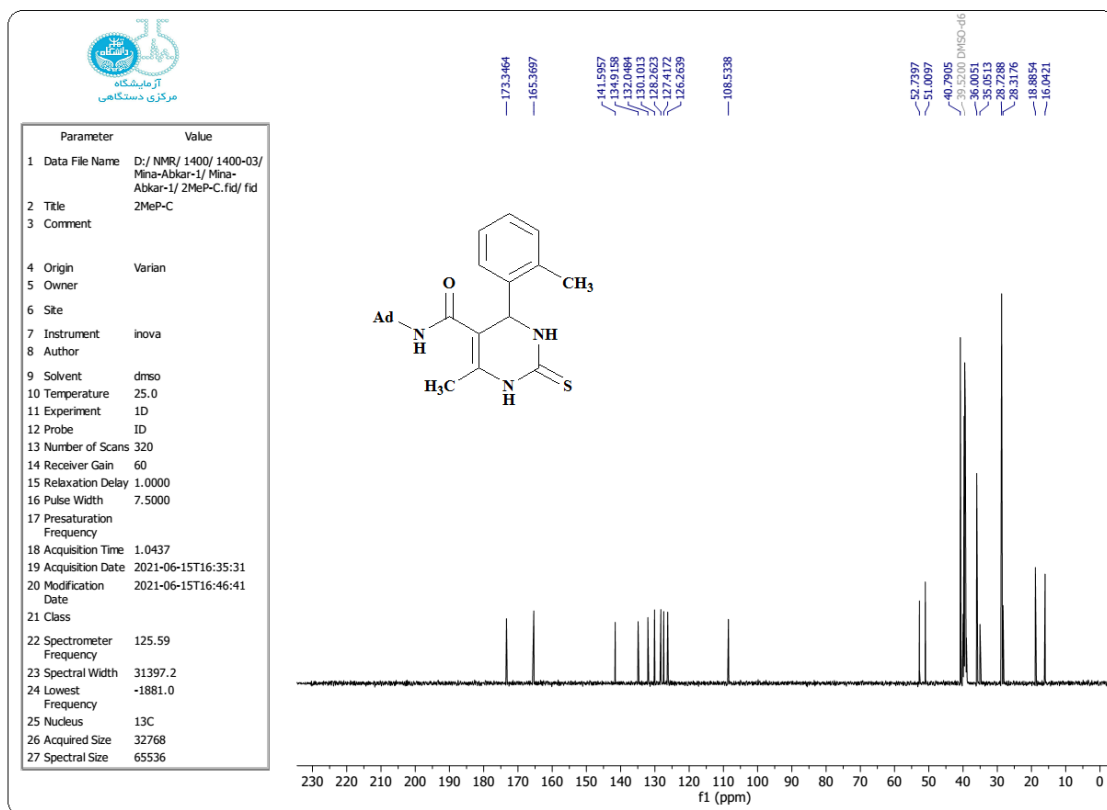
FTIR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(2-methylphenyl) –3,4-dihydropyrimidin-2(1H)-thione [Iib]



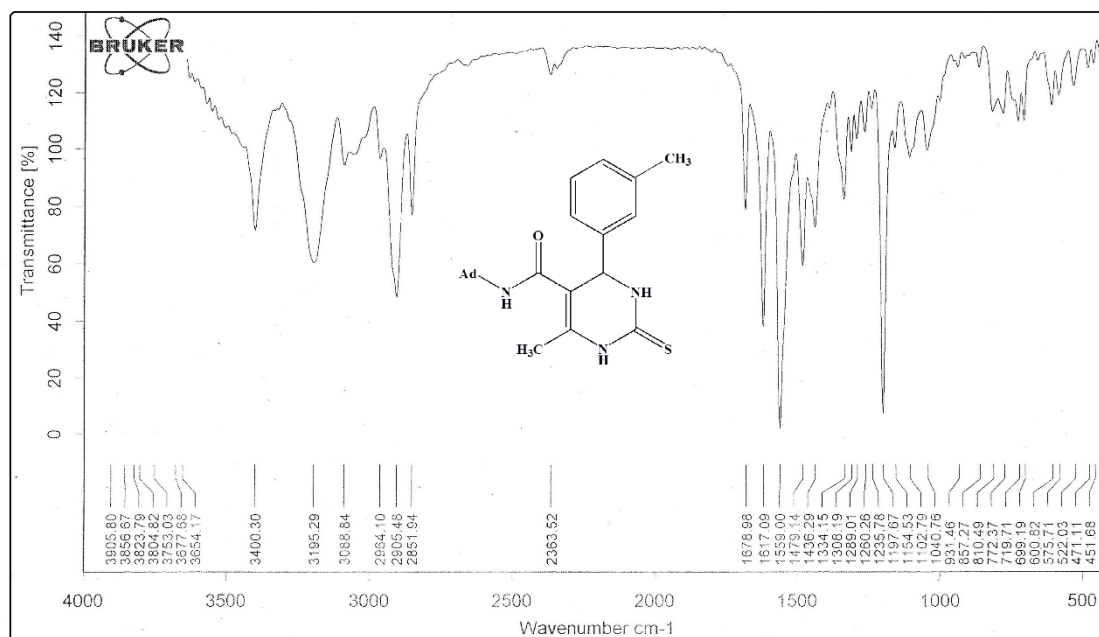
¹HNMR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(2-methylphenyl) –3,4-dihydropyrimidin-2(1H)-thione [Iib]



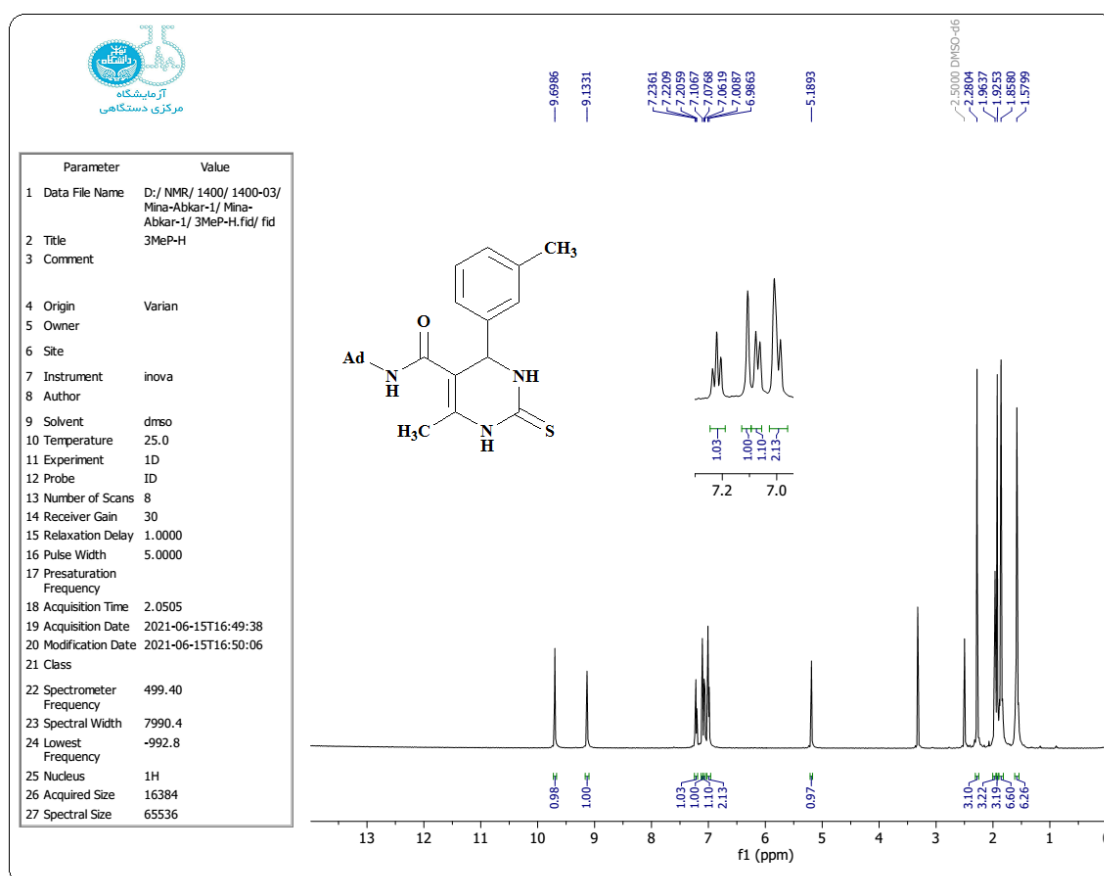
¹³CNMR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(2-methylphenyl) –3,4-dihydropyrimidin-2(1H)-thione [Iib]



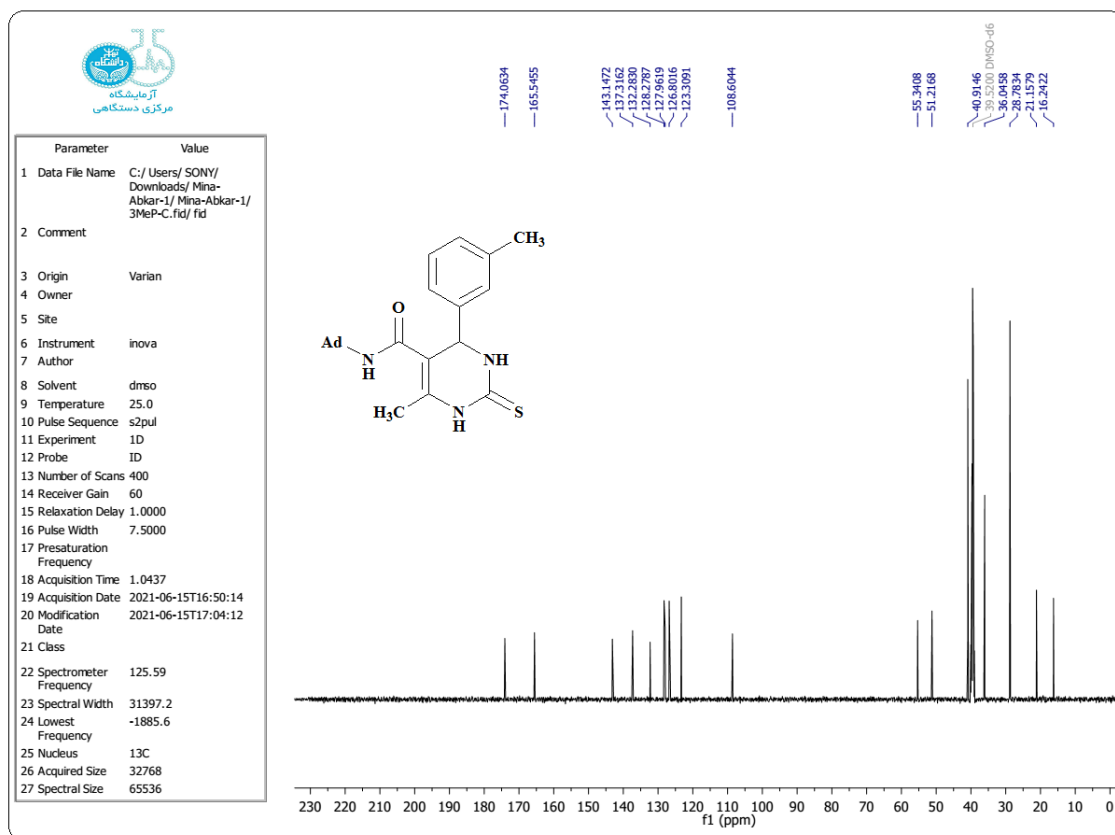
FTIR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-methylphenyl)-3,4-dihydropyrimidin-2(1H)-thione [Ic]



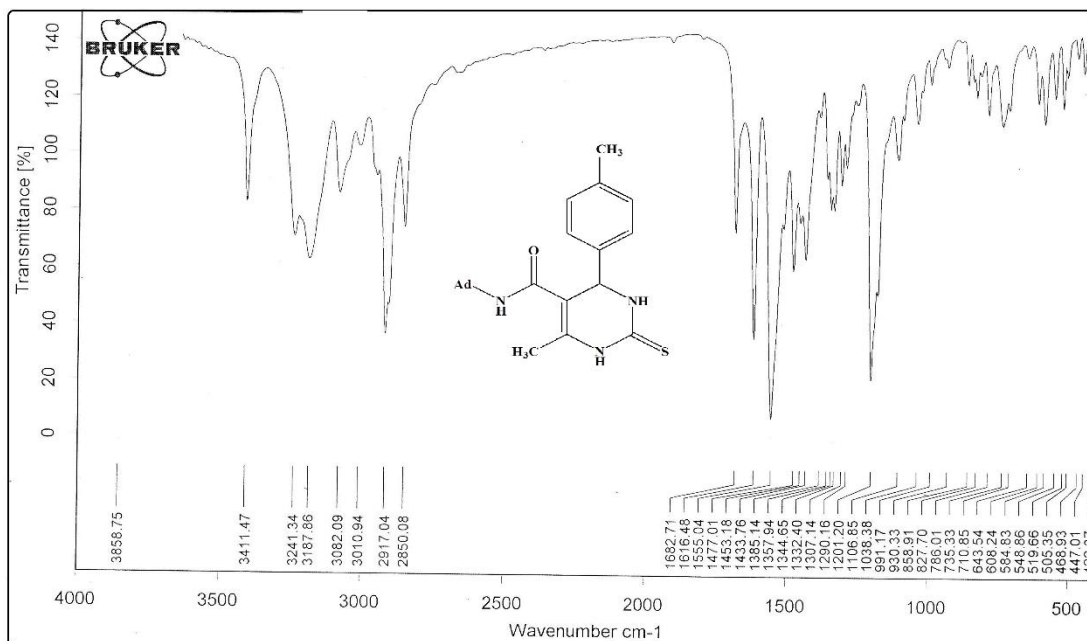
¹H NMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-methylphenyl)-3,4-dihydropyrimidin-2(1H)-thione [Ic]



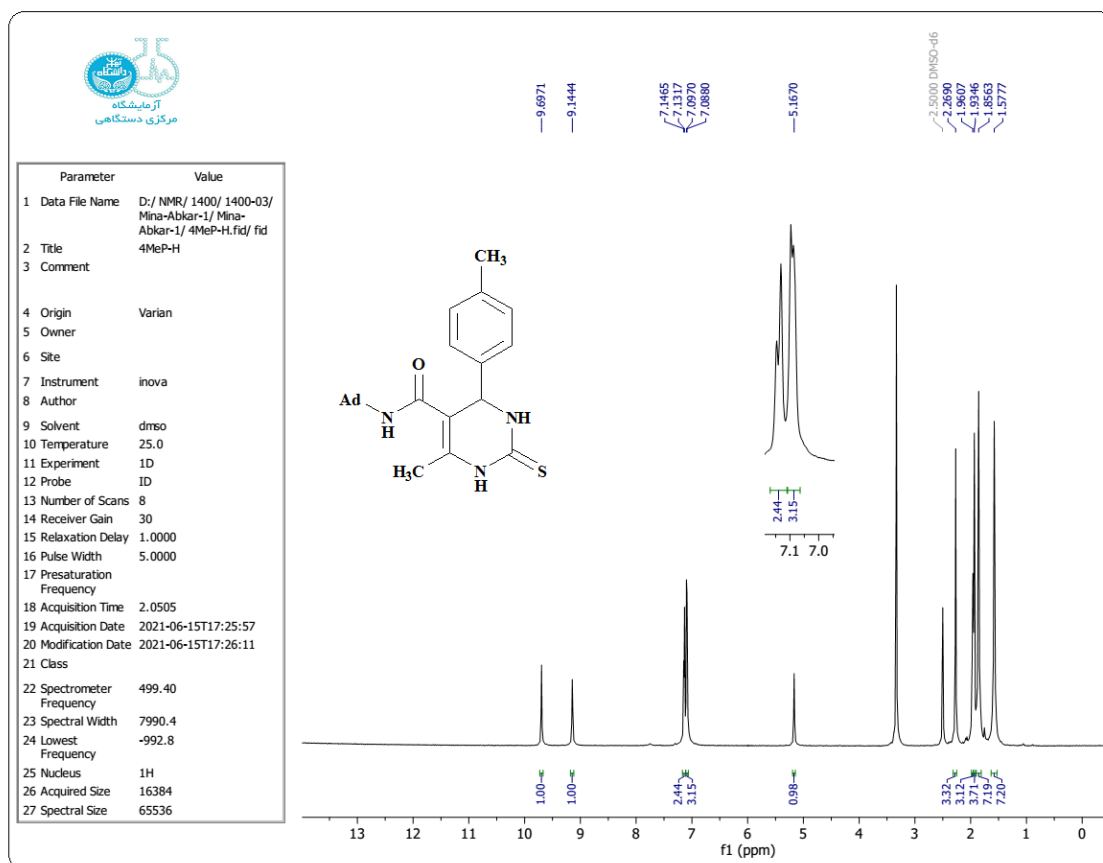
¹³CNMR of 5-(1-adamantylcarbonyl)-6-methyl-4-(3-methylphenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIc]



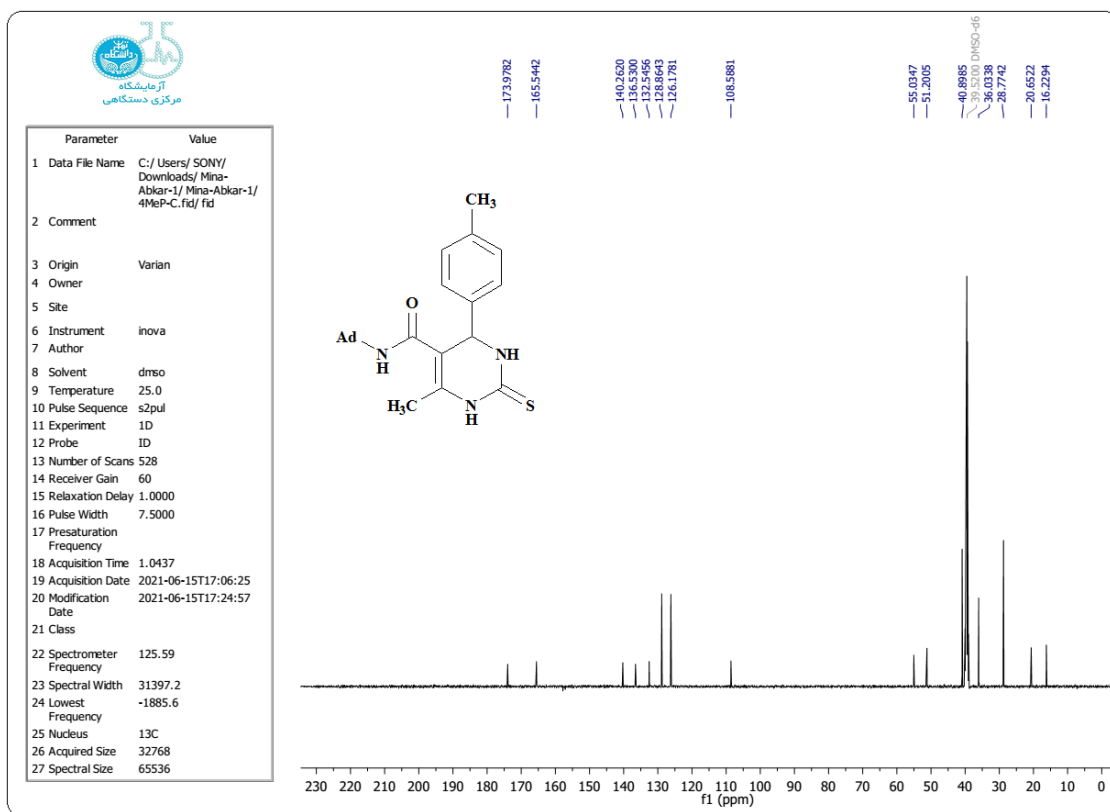
FTIR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(4-methylphenyl) –3,4-dihydropyrimidin-2(1H)-thione [IIId]



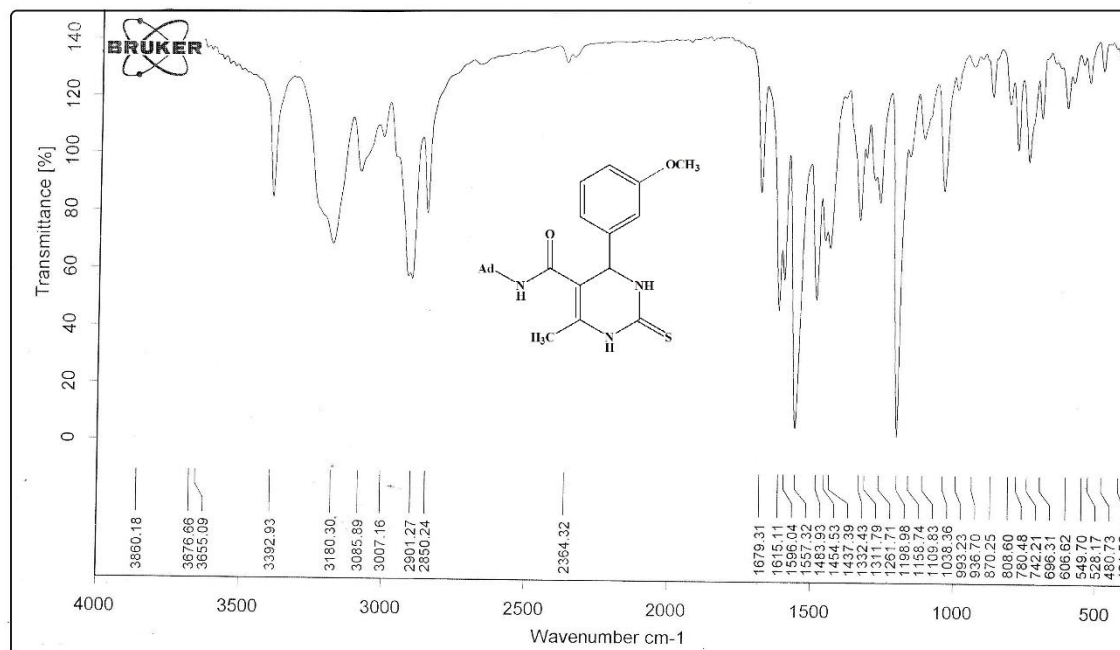
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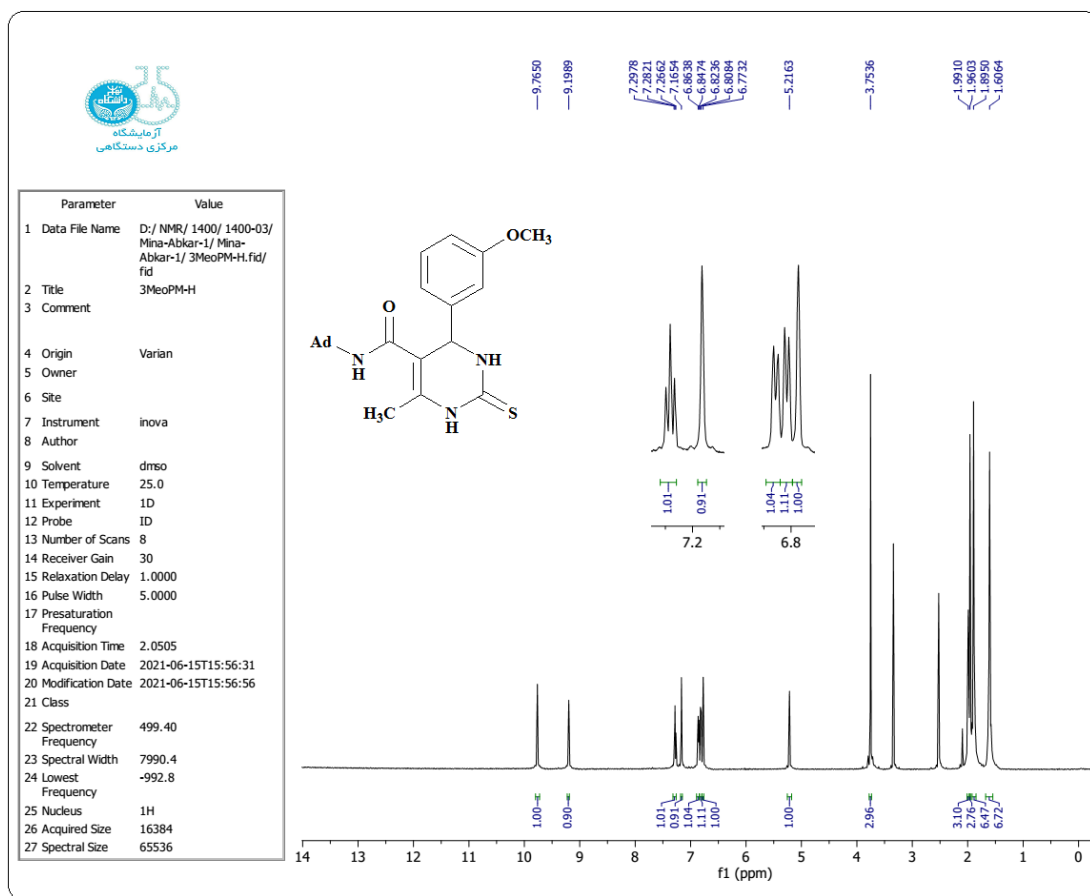
¹³CNMR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(4-methylphenyl) –3,4-dihydropyrimidin-2(1H)-thione [IId]



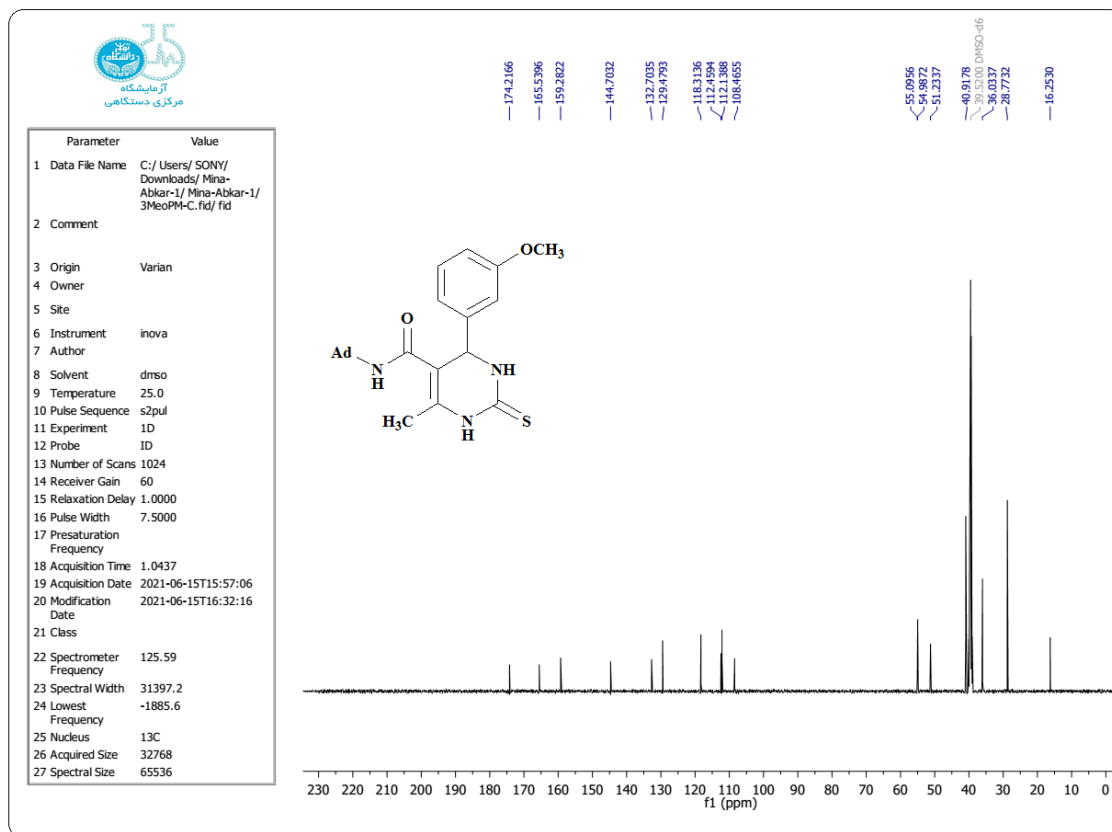
FTIR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(3-methoxyphenyl) –3,4-dihydropyrimidin-2(1H)-thione [Ile]



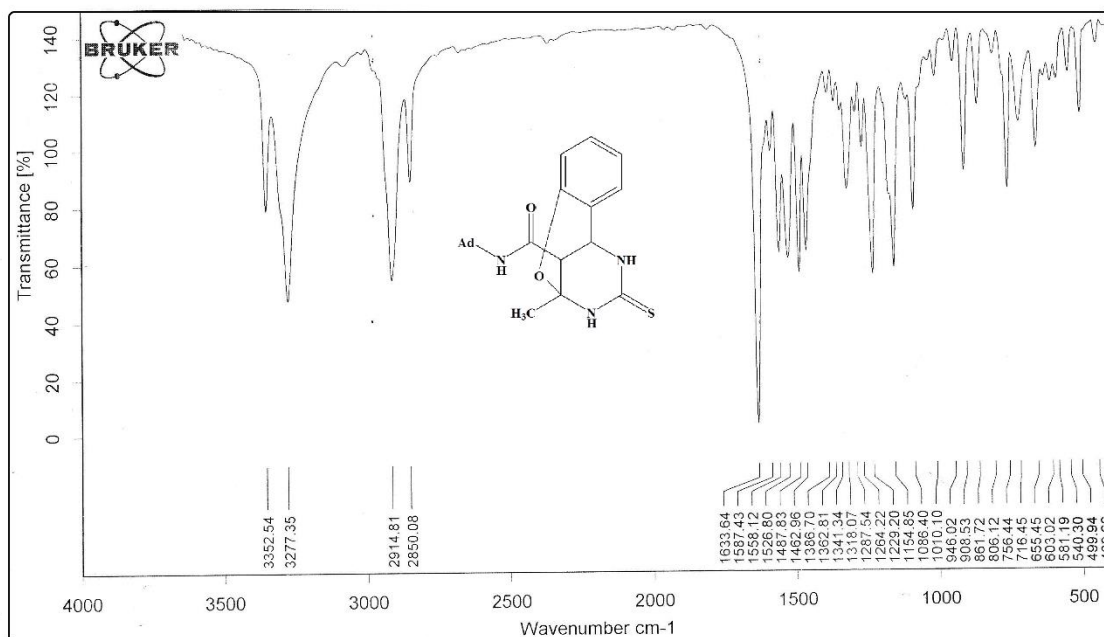
¹HNMR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(3-methoxyphenyl) –3,4-dihydropyrimidin-2(1H)-thione [Ile]



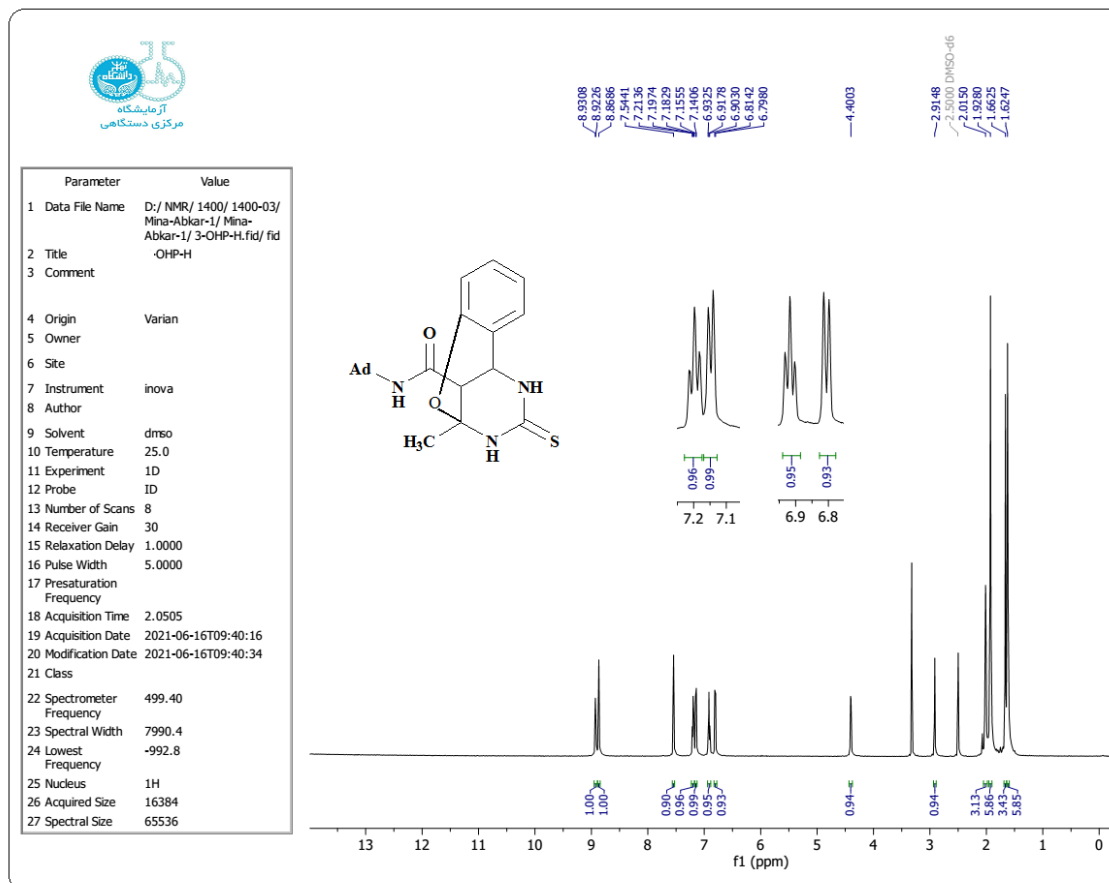
¹³CNMR of 5-(1-adamantylcarbamoyl) –6-methyl-4-(3-methoxyphenyl) –3,4-dihydropyrimidin-2(1H)-thione [IIe]



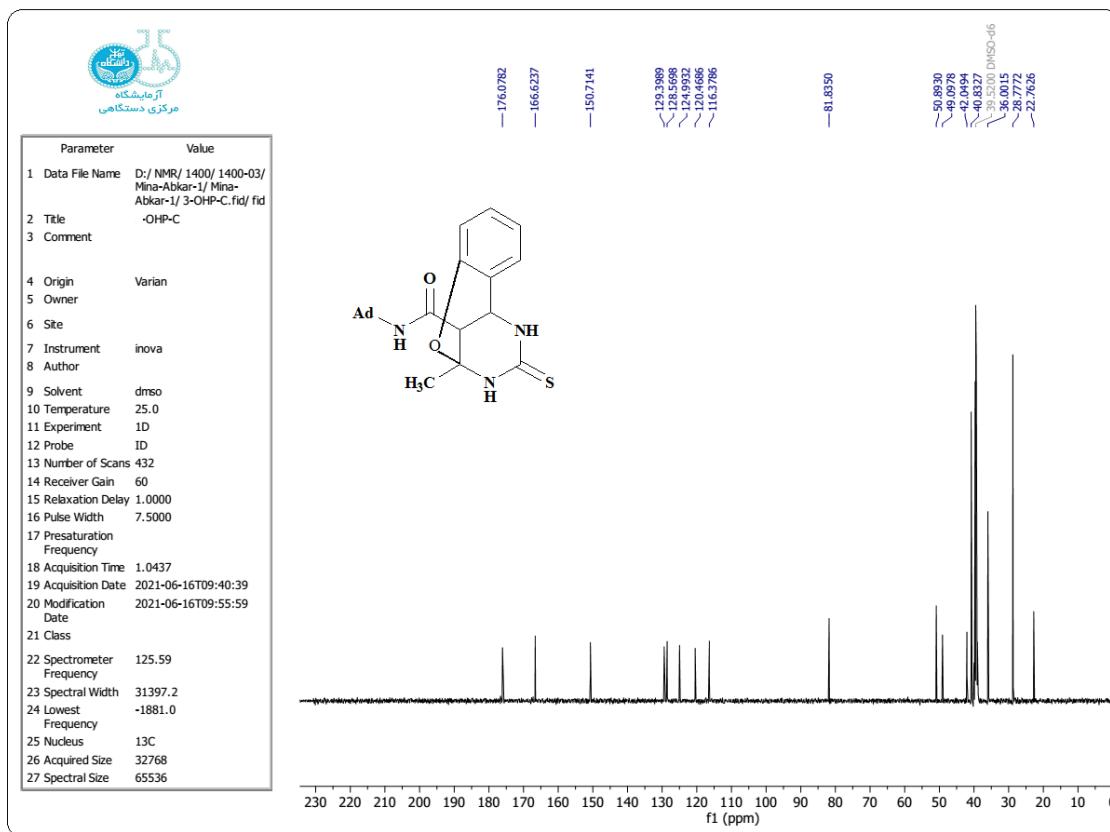
FTIR of 13-(1-adamantylcarbamoyl) –9-methyl-11-thioxo-8-oxa-10,12-diazatricyclo [7.3.1.0^{2,7}] trideca-2,4,6-triene [IIf]



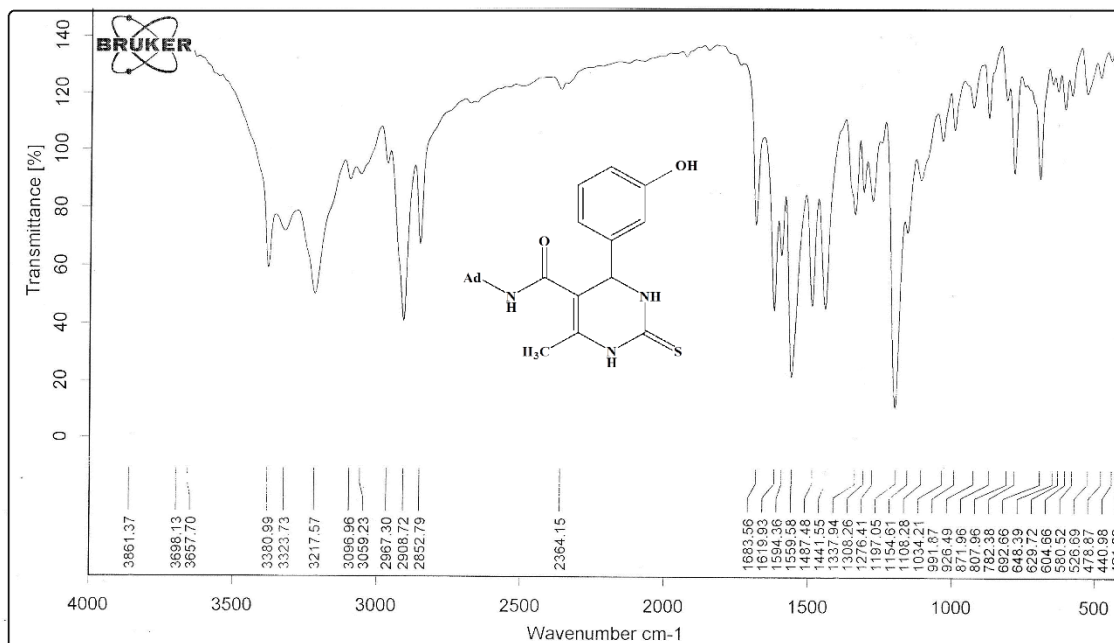
¹HNMR of 13-(1-adamantylcarbamoyl) –9-methyl-11-thioxo-8-oxa-10,12-diazatricyclo [7.3.1.0^{2,7}] trideca-2,4,6-triene [IIf]



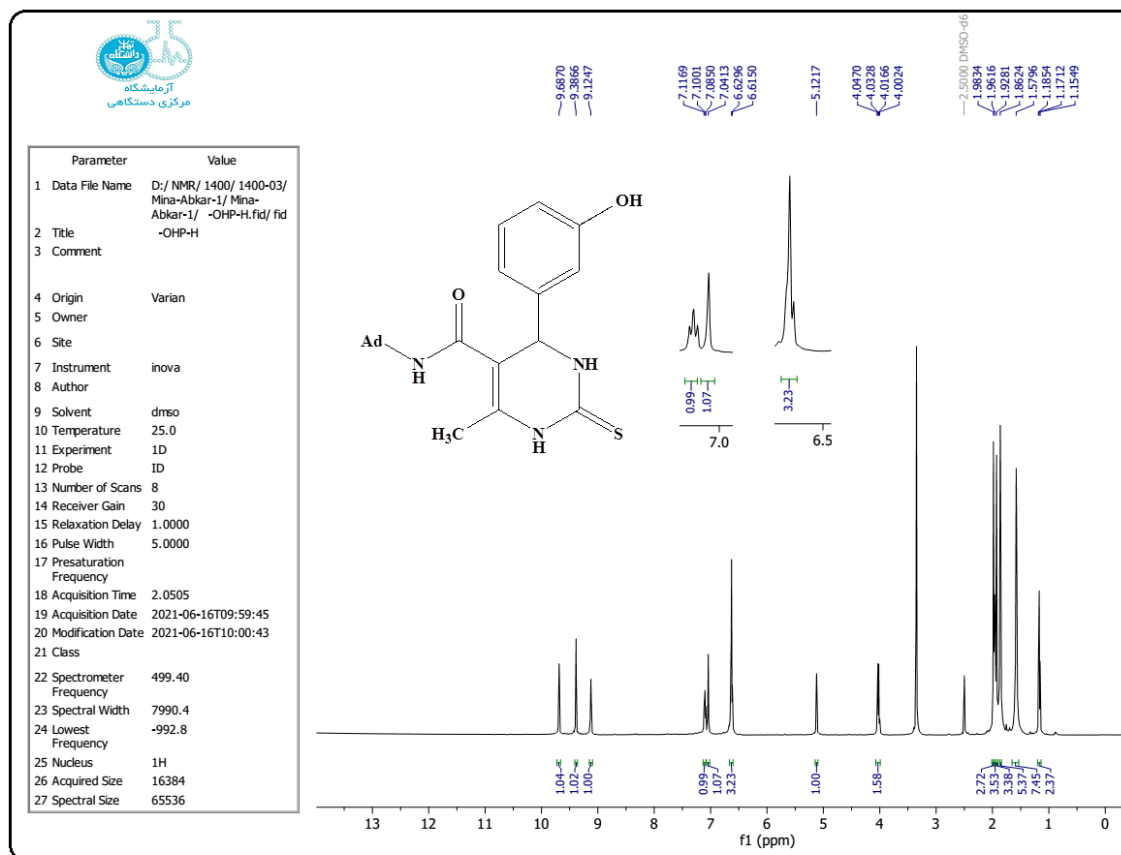
¹³CNMR of 13-(1-adamantylcarbamoyl) -9-methyl-11-thioxo-8-oxa-10,12-diazatricyclo [7.3.1.0^{2,7}] trideca-2,4,6-triene [IIf]



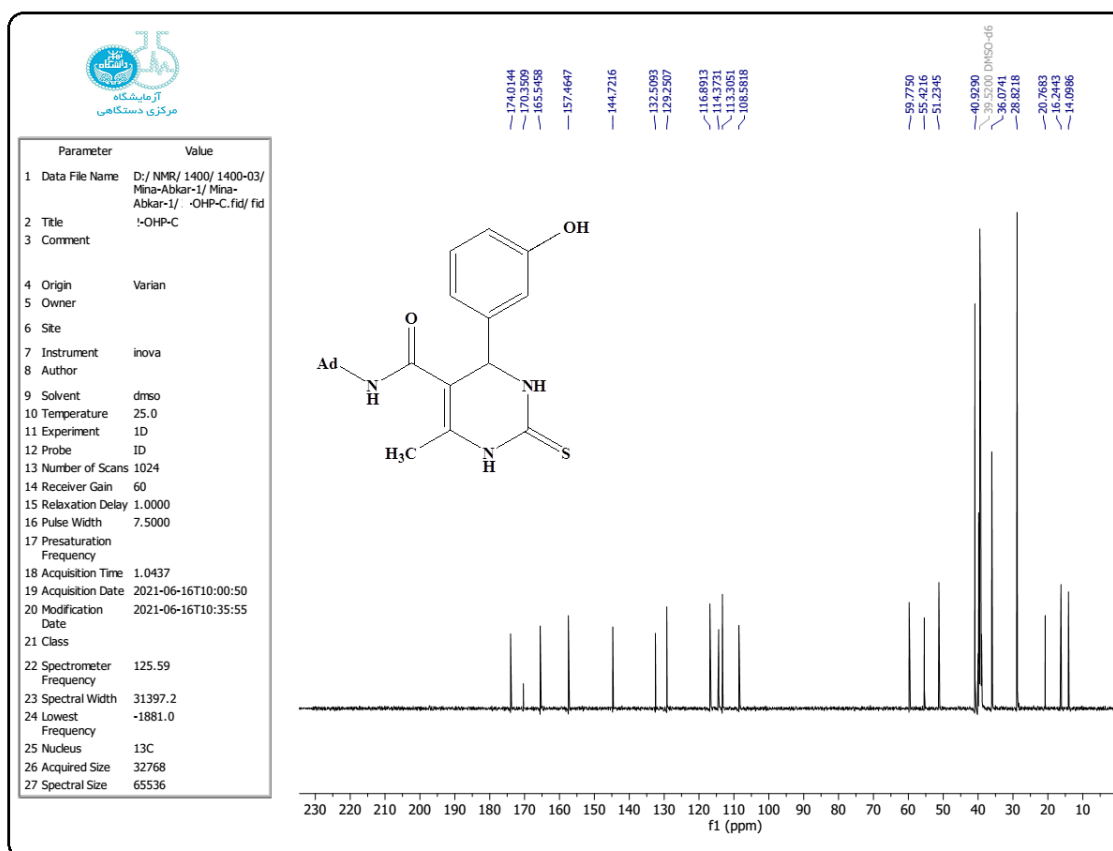
FTIR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-hydroxyphenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIh]



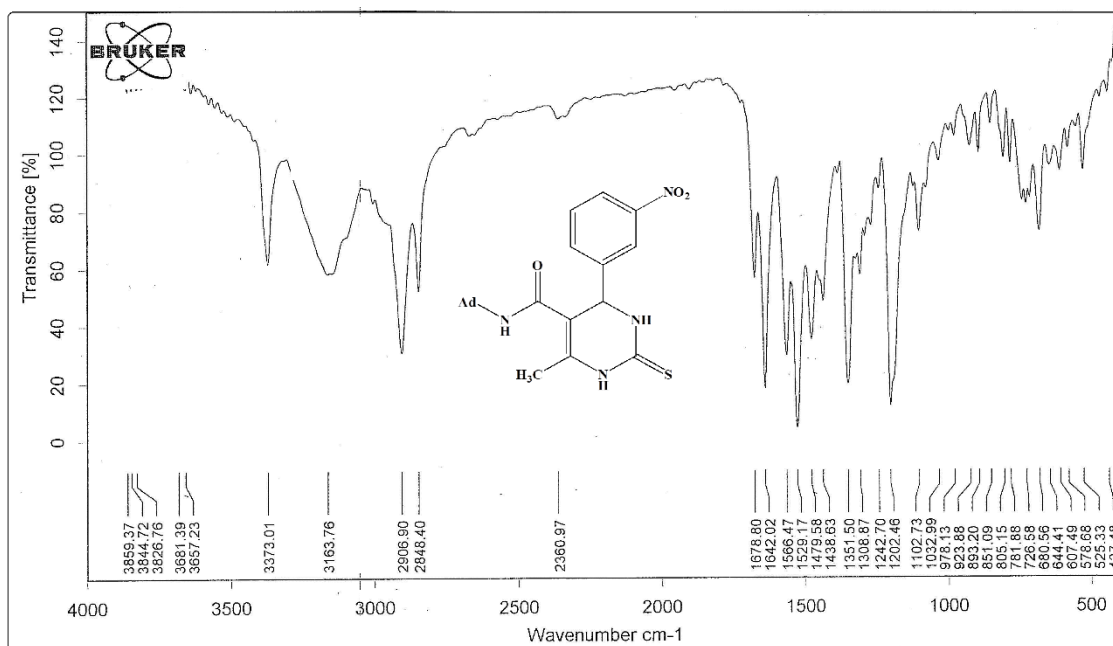
¹HNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-hydroxyphenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIh]



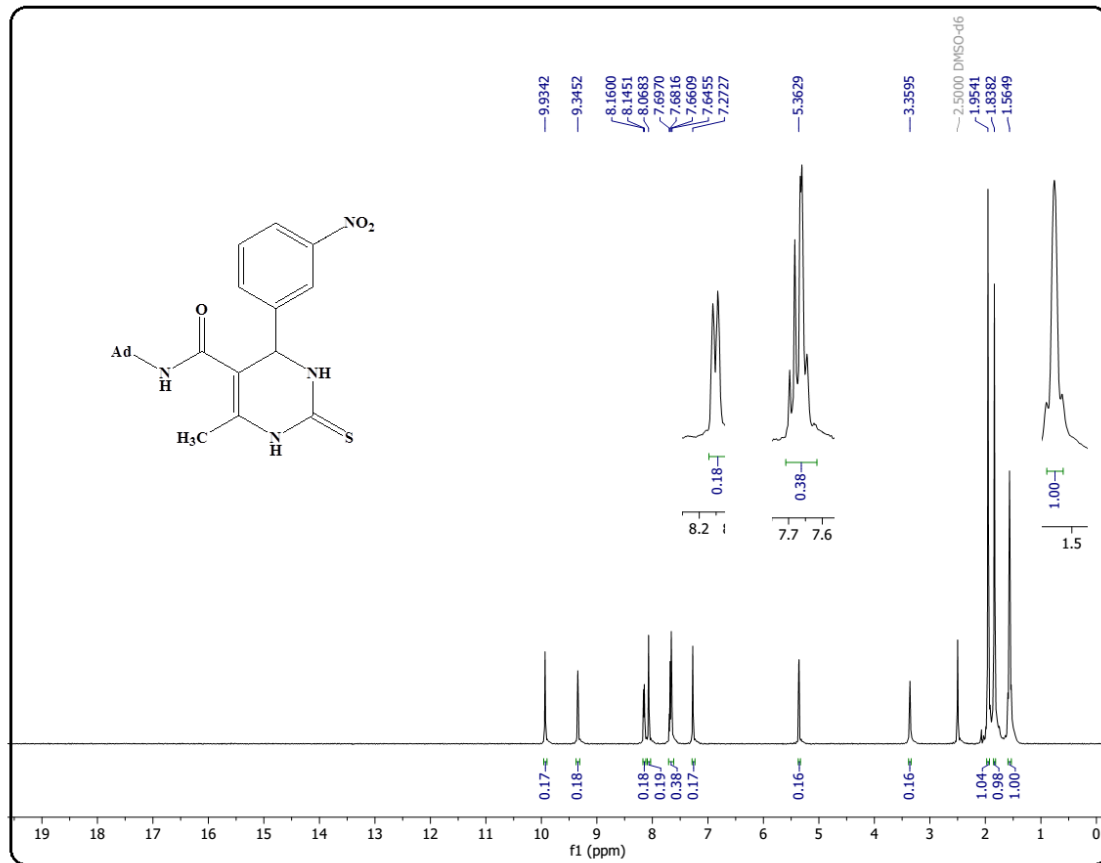
¹³CNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-hydroxyphenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIh]



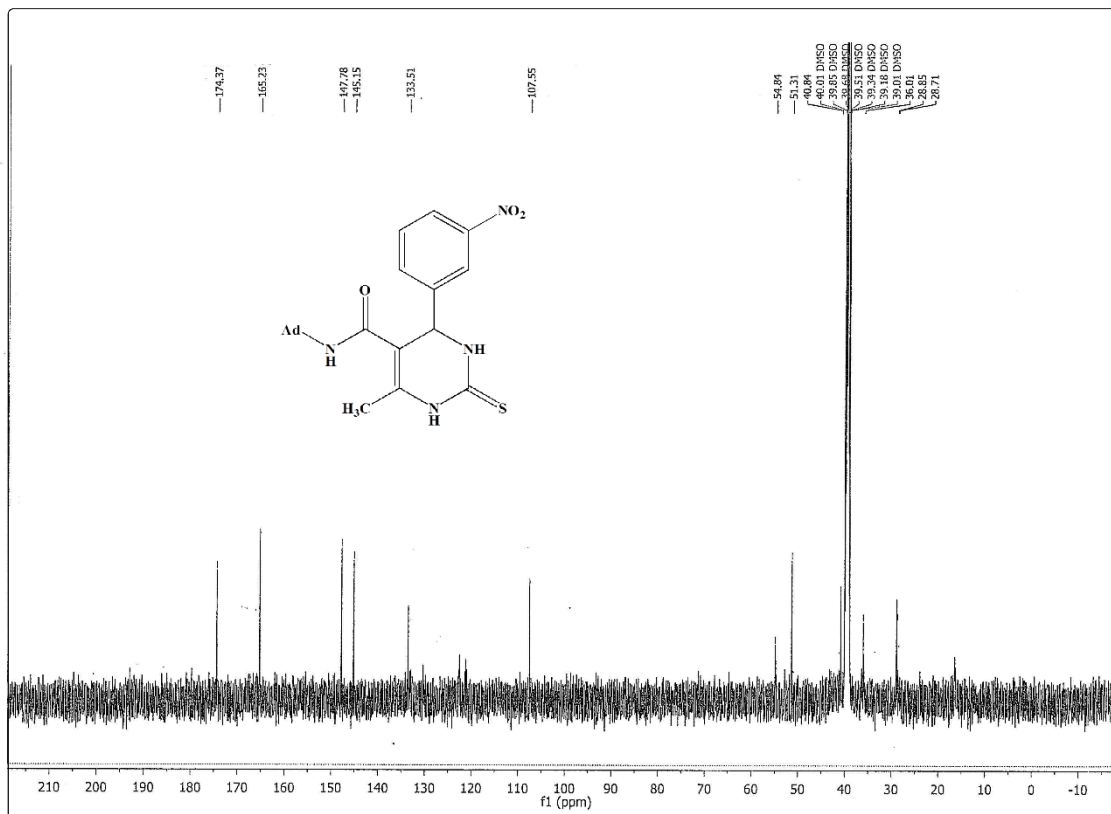
FTIR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-nitrophenyl)-3,4-dihydropyrimidin-2(1H)-thione [Iii]



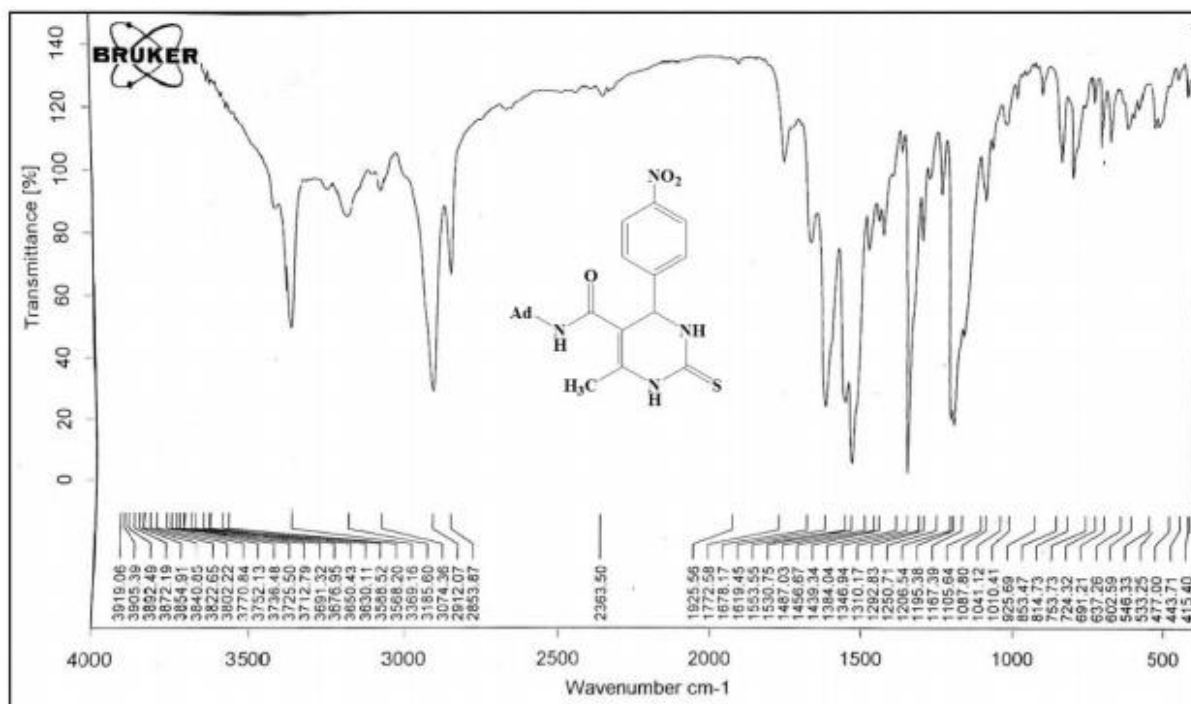
¹HNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-nitrophenyl)-3,4-dihydropyrimidin-2(1H)-thione [Iii]



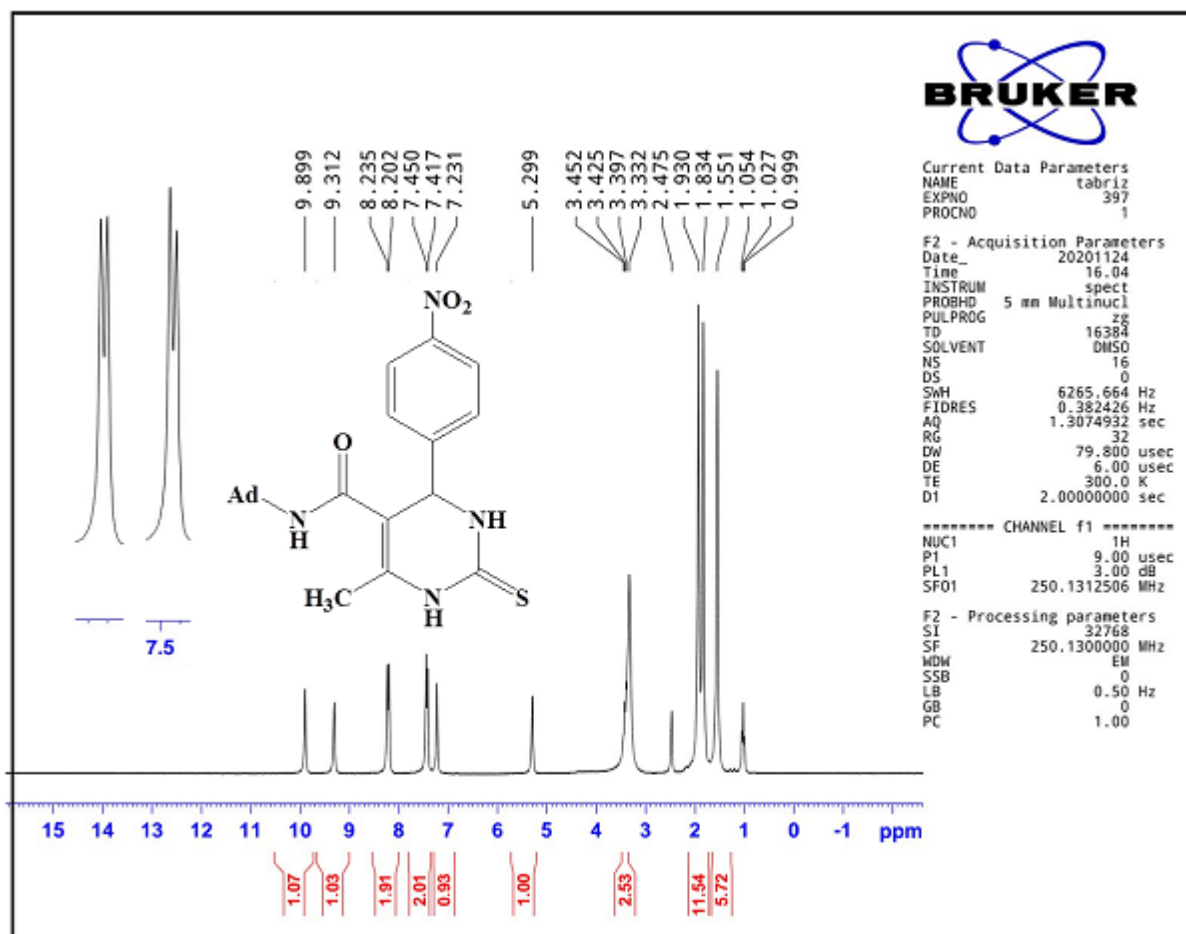
¹³CNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-nitrophenyl)-3,4-dihydropyrimidin-2(1H)-thione [III]



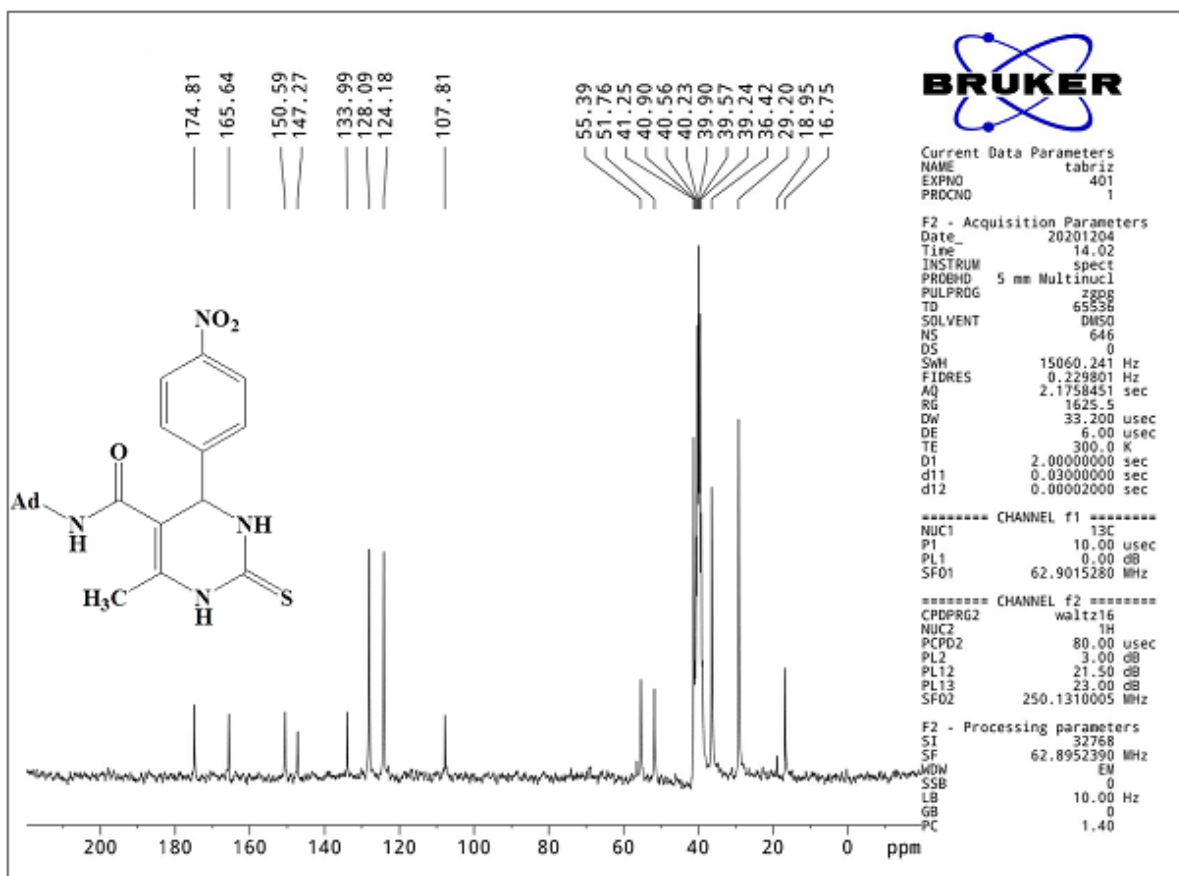
FTIR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(4-nitrophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIg]



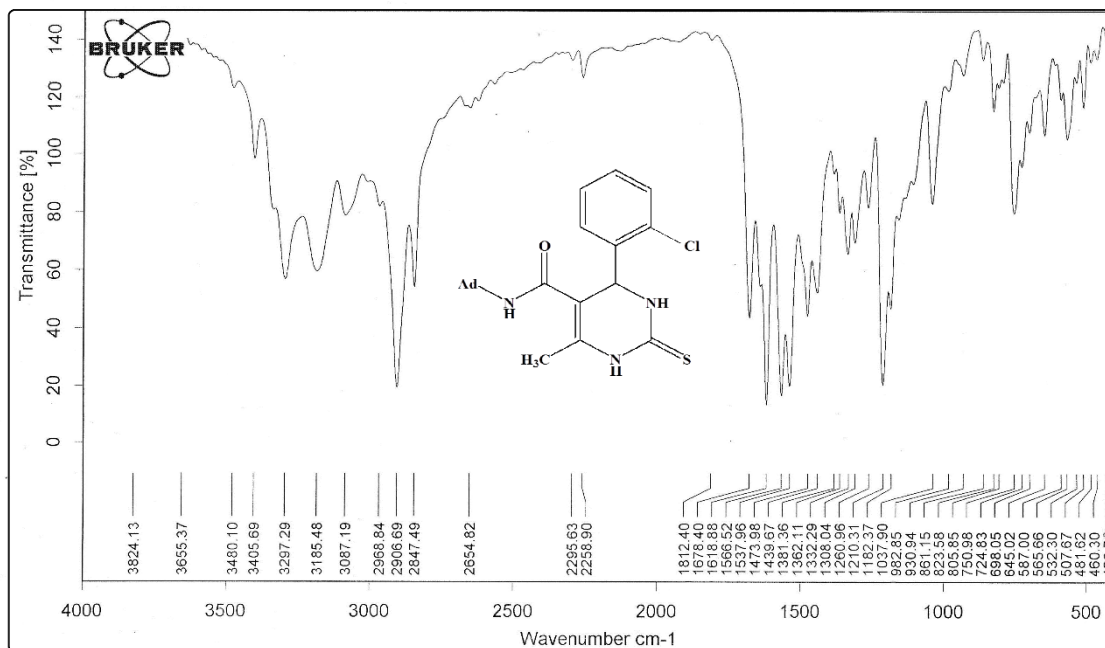
¹HNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(4-nitrophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIg]



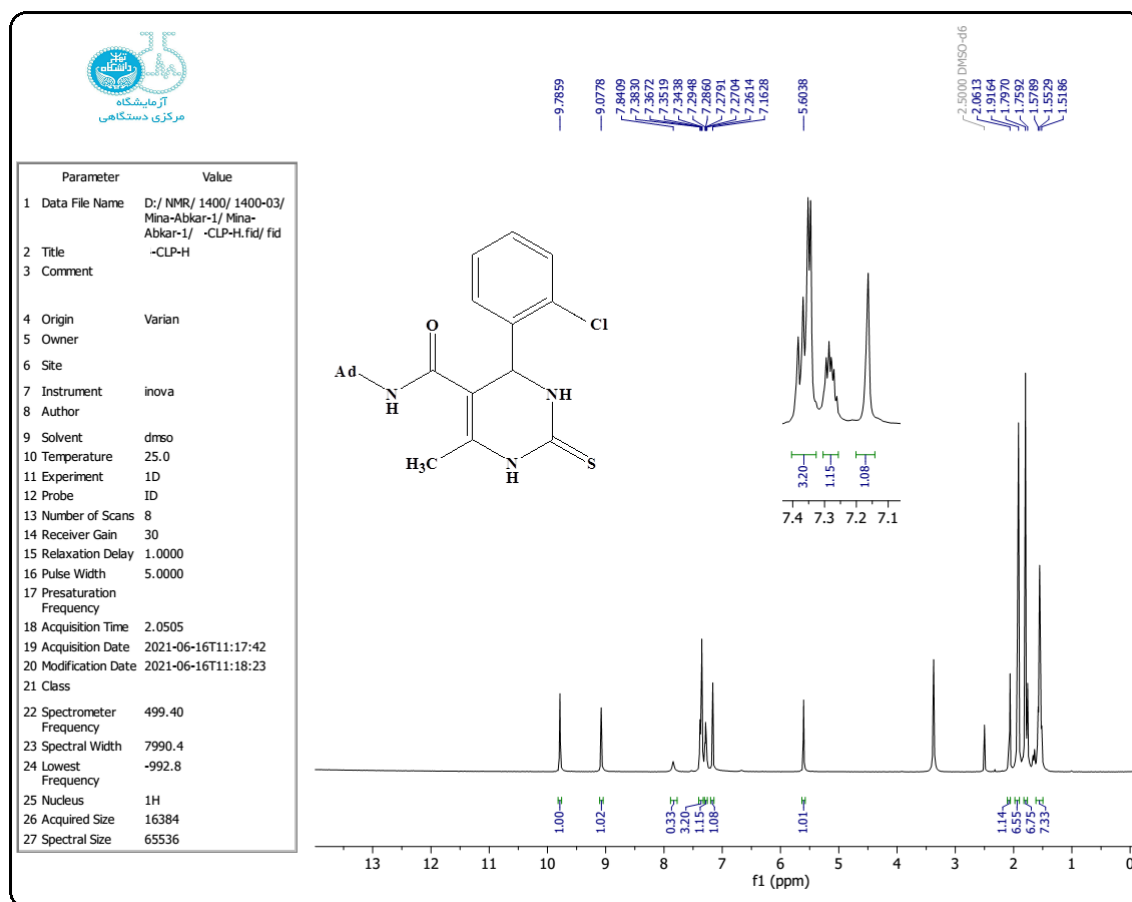
¹³CNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(4-nitrophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIg]



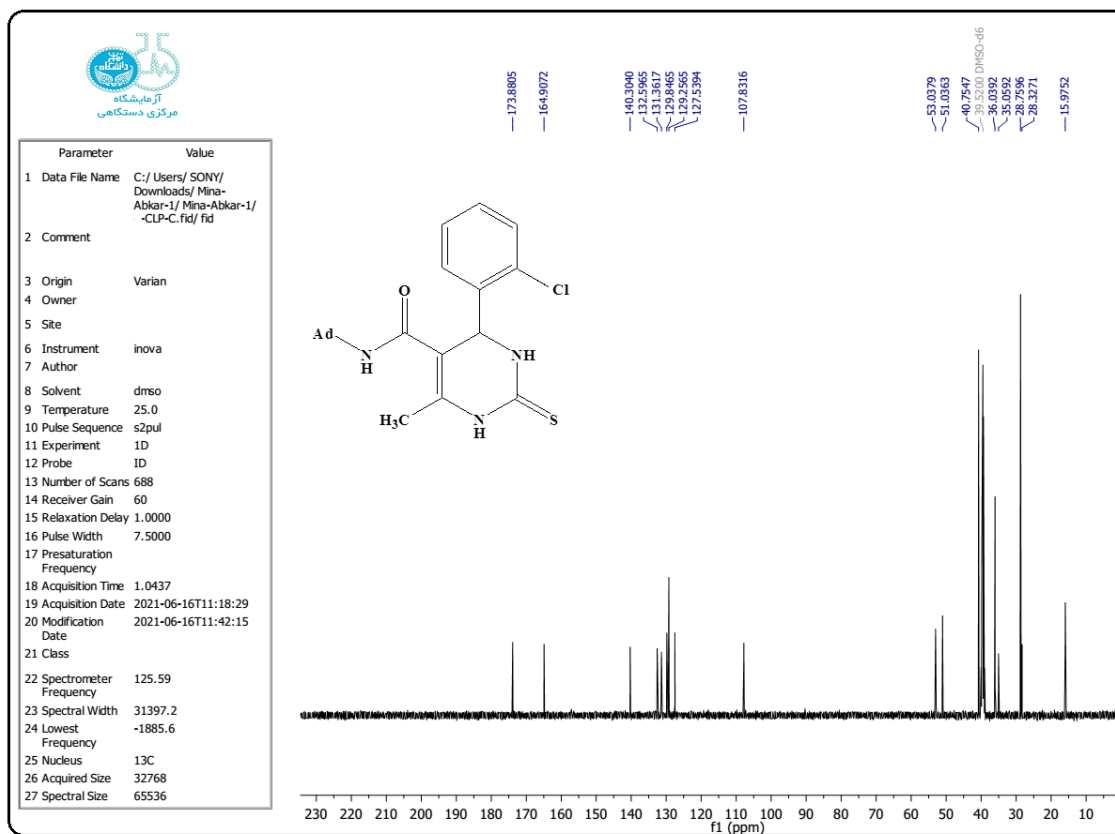
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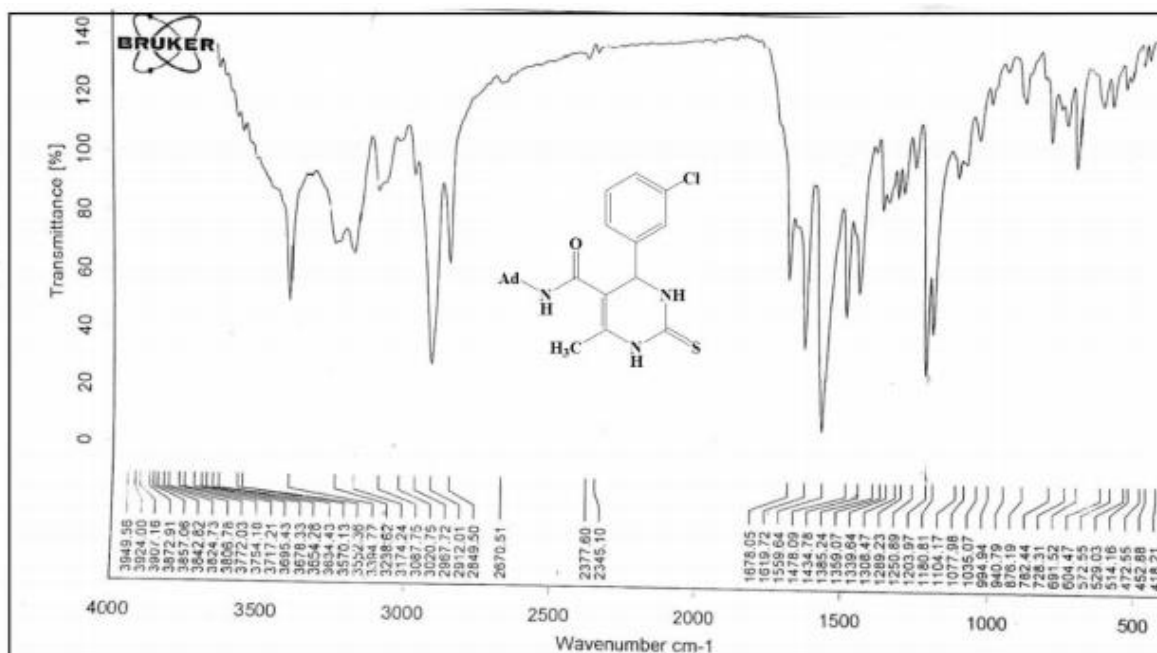
¹H NMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(2-chlorophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIj]



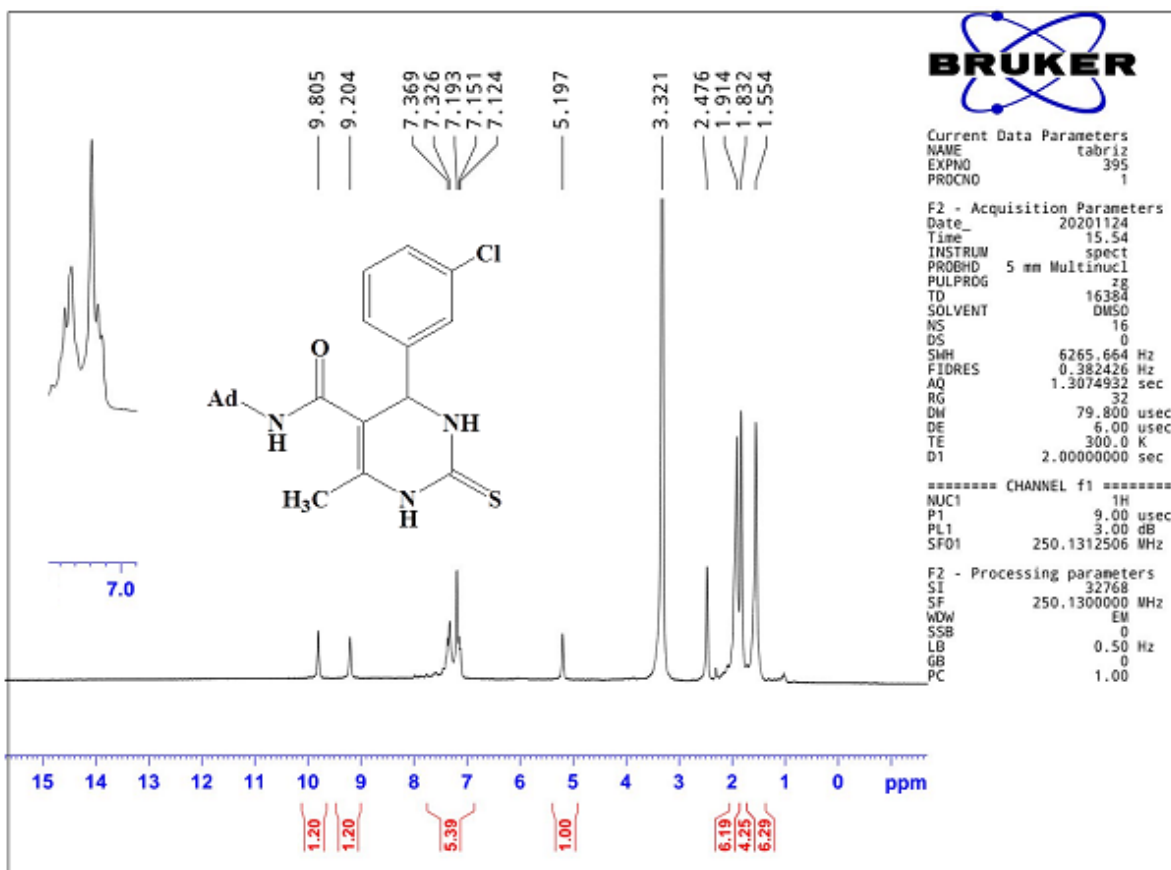
¹³CNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(2-chlorophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIj]



FTIR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-chlorophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIk]



¹HNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-chlorophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIk]



¹³CNMR of 5-(1-adamantylcarbamoyl)-6-methyl-4-(3-chlorophenyl)-3,4-dihydropyrimidin-2(1H)-thione [IIk]

