

L-Methionine-Zr complex supported on magnetic ZnFe₂O₄ as a novel, green, and efficient heterogeneous magnetic nanocatalyst for the synthesis of 1H-tetrazole and polyhydroquinoline derivatives

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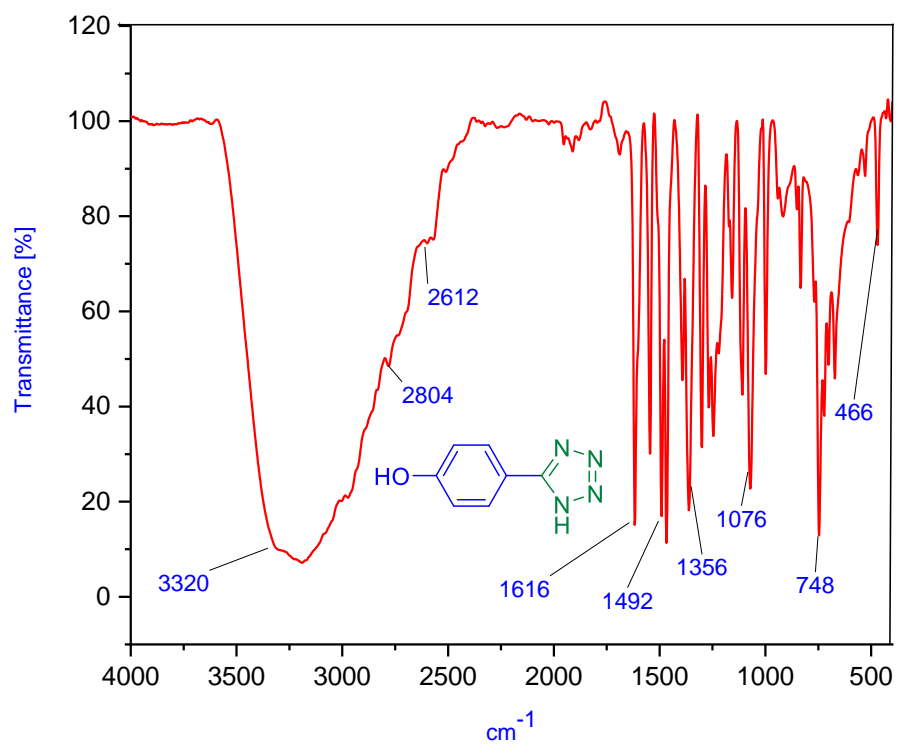


Figure 1: FT-IR analysis of 4-(1H-tetrazol-5-yl)phenol.

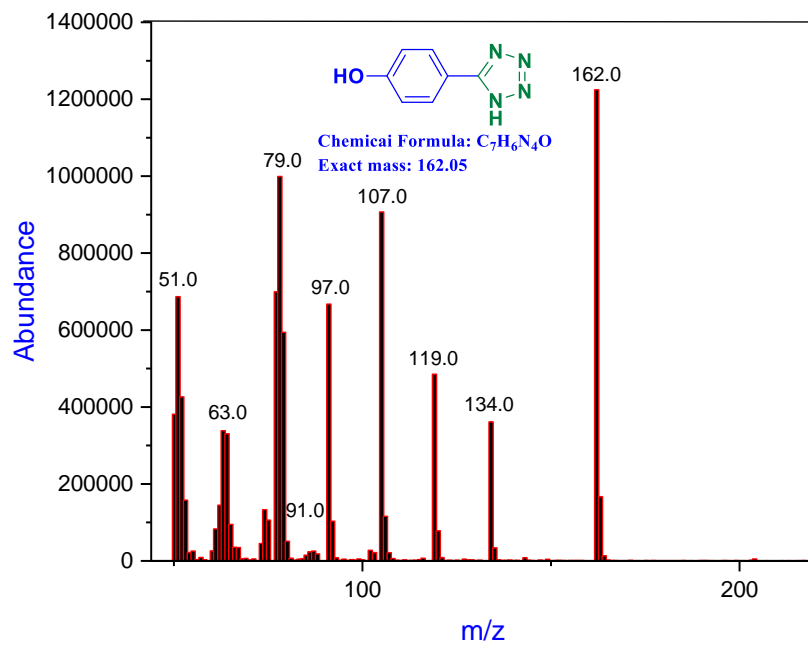


Figure 2: The Mass spectrum of 4-(1H-tetrazol-5-yl)phenol.

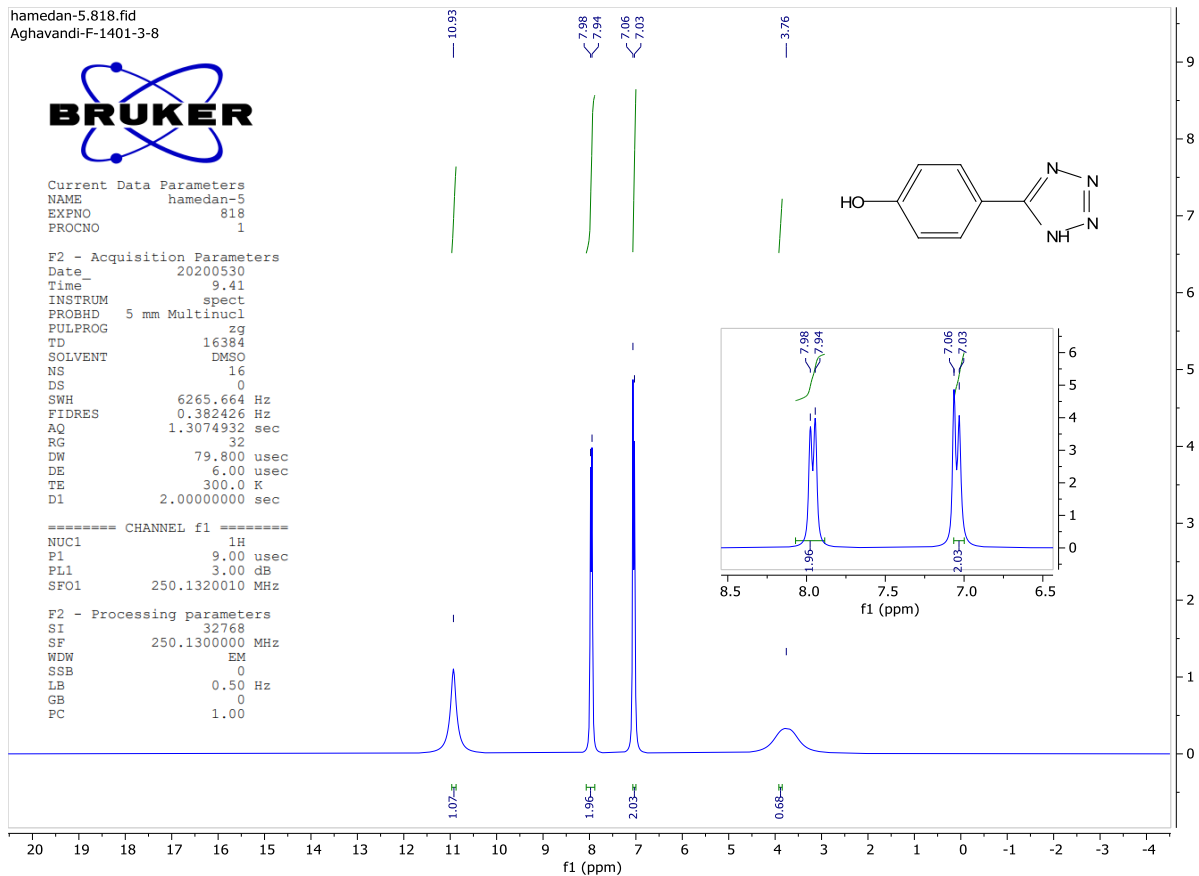


Figure 3: $^1\text{H-NMR}$ 4-(1H-tetrazol-5-yl) phenol.

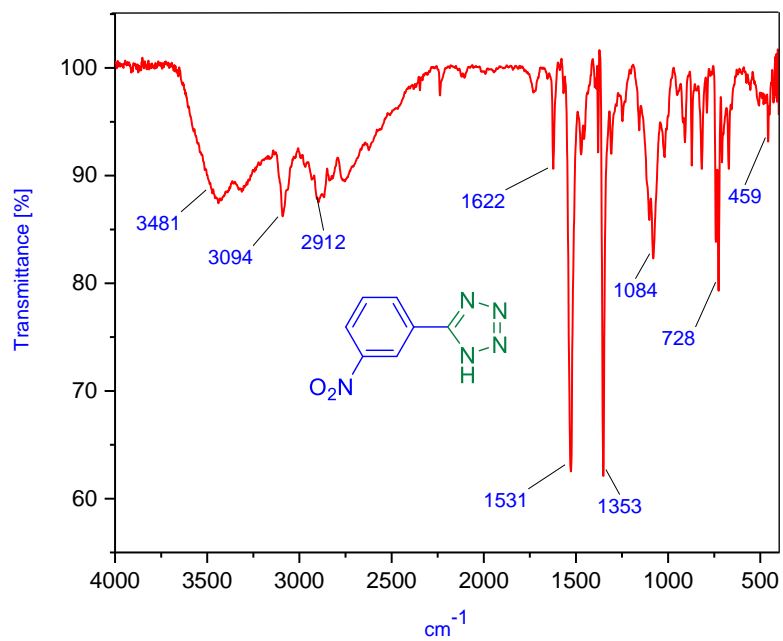


Figure 4: FT-IR analysis of 5-(3-nitrophenyl)-1H-tetrazole.

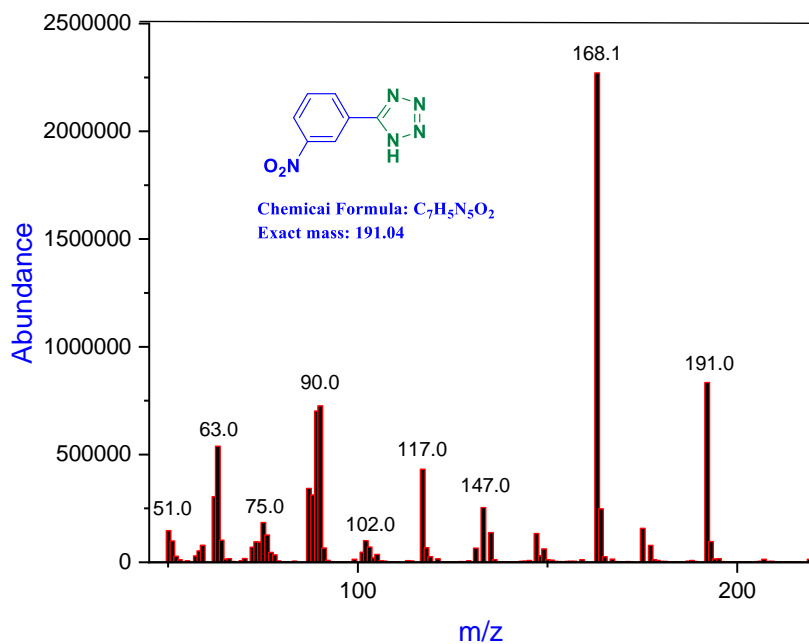


Figure 5: The Mass spectrum of 5-(3-nitrophenyl)-1H-tetrazole.

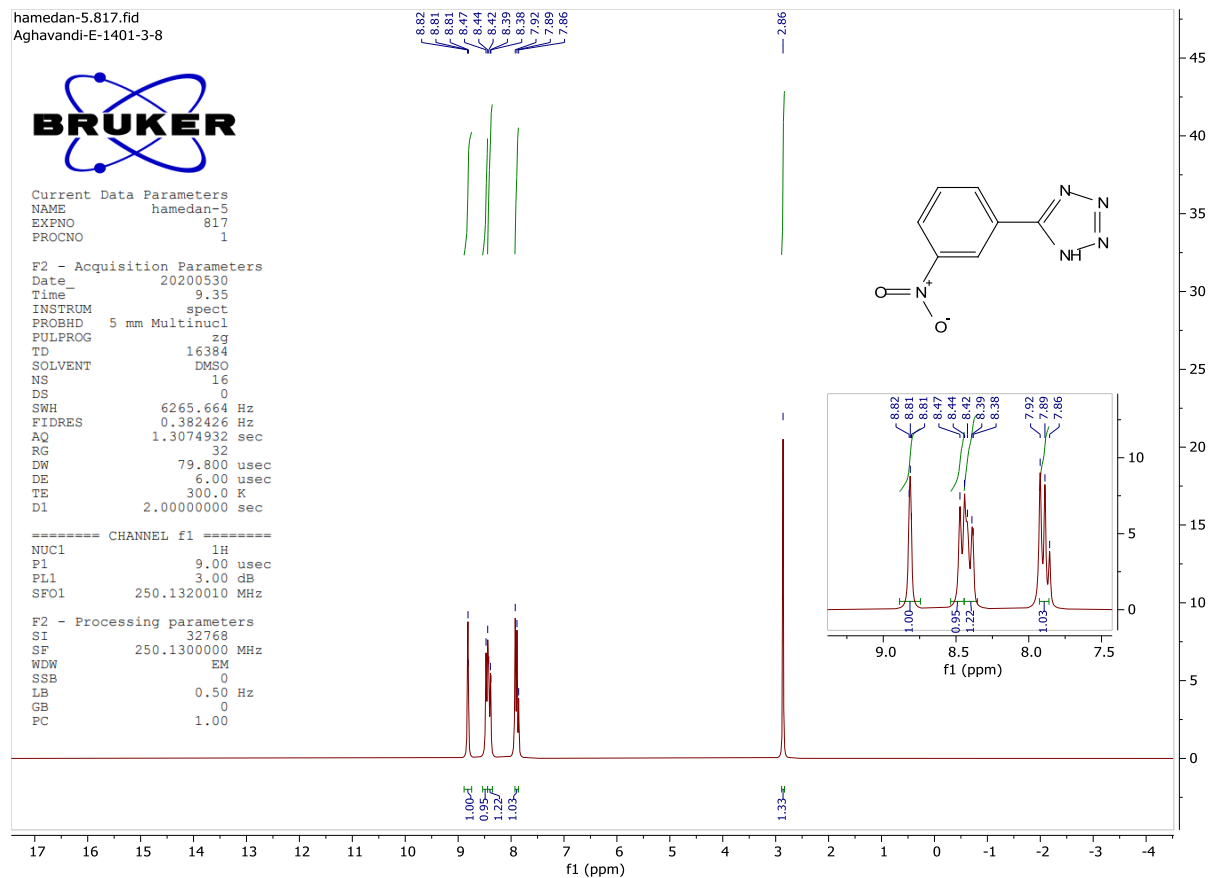


Figure 6: $^1\text{H-NMR}$ 5-(3-nitrophenyl)-1H-tetrazole.

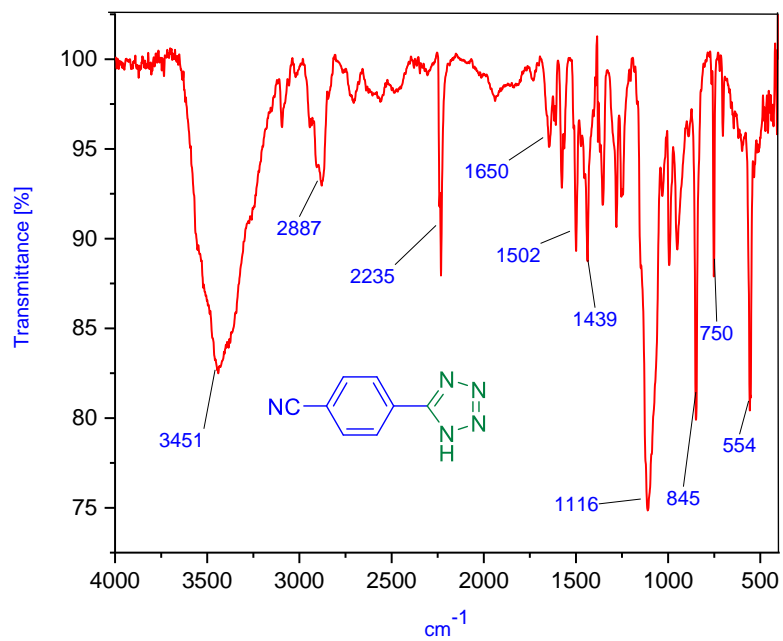


Figure 7: FT-IR analysis of 4-(1H-tetrazol-5-yl) benzonitrile.

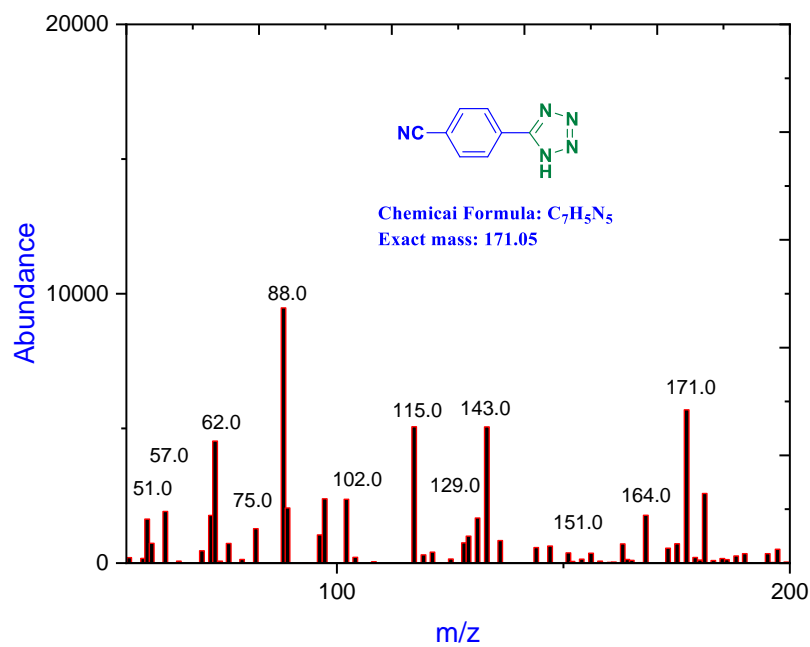


Figure 8: The Mass spectrum of 4-(1H-tetrazol-5-yl) benzonitrile.

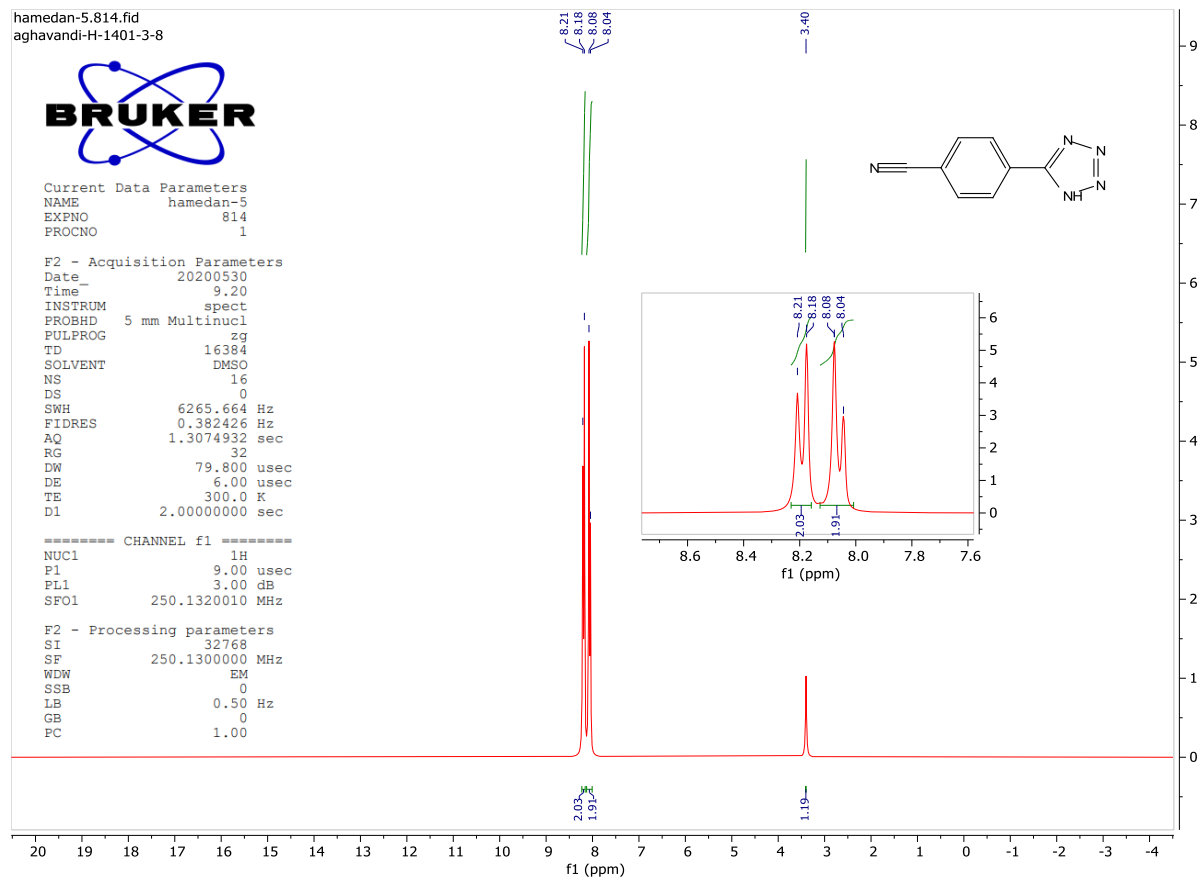


Figure 9: $^1\text{H-NMR}$ 4-(1H-tetrazol-5-yl) benzonitrile.

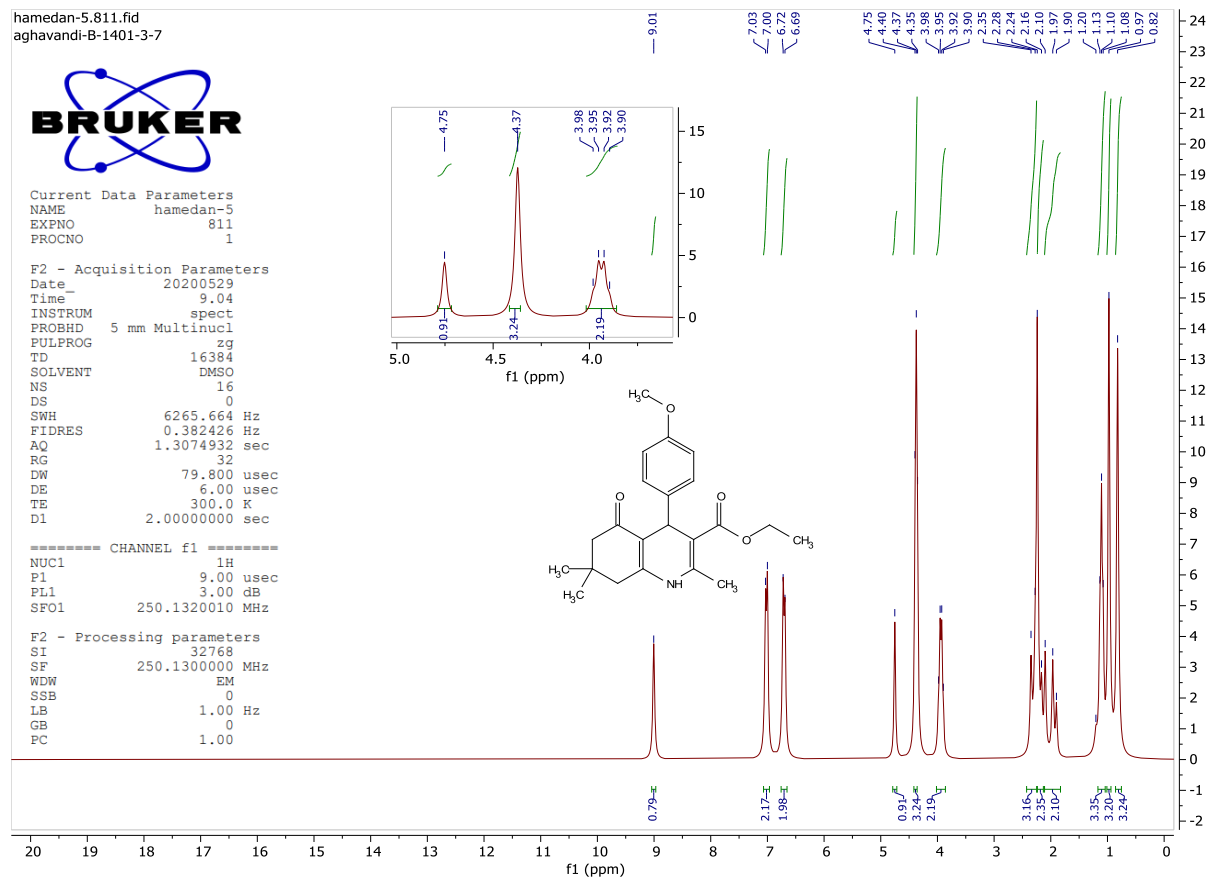


Figure 10: $^1\text{H-NMR}$ ethyl 4-(4-methoxyphenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate.

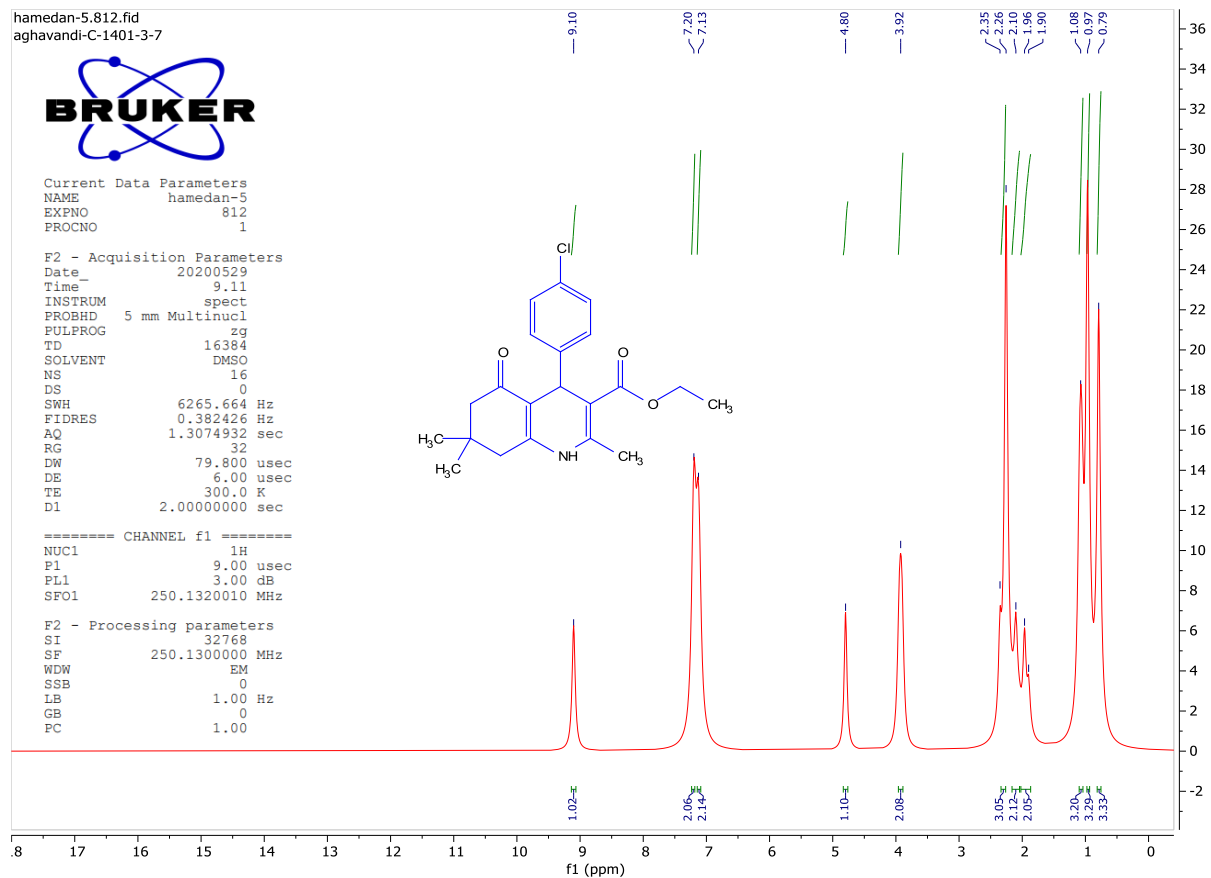


Figure 11: $^1\text{H-NMR}$ ethyl 4-(4-chlorophenyl)-2,7,7-trimethyl-5-oxo-1,4,5,6,7,8-hexahydroquinoline-3-carboxylate.