

## SUPPORTING INFORMATION

### Solvent-Free Synthesis of Some 1-Acetyl Pyrazoles

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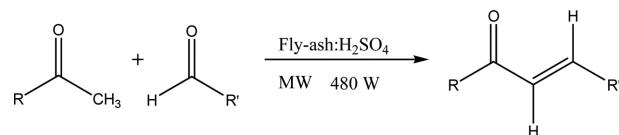
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(Received June 11, 2013; Accepted August 28, 2013)

#### Synthesis of 3,4-Dichlorophenyl Chalcones<sup>21</sup>

The substituted styryl 3,4-dichlorophenyl ketones were synthesized by literature method. An appropriate equimolar quantities of 3,4-dichloro acetophenone (2 mmol), substituted benzaldehydes (2 mmol) and Fly-ash:H<sub>2</sub>SO<sub>4</sub> (0.5 g) were taken in Borosil tube and tightly capped. The mixture was subjected to microwave heated for 5–6 minutes (*Scheme S1*; See supplementary data) in a microwave oven at 480 W (Samsung Grill, GW73BD Microwave oven, 230V A/c, 50Hz, 2450Hz, 100–750W (IEC-705), and then cooled to room temperature. The organic layer was separated with dichloromethane and the solid product was obtained on evaporation. The solid, on recrystallization with benzene-hexane mixture gave glittering pale yellow solid.

The insoluble catalyst was recycled by washing the solid reagent remained on the filter by ethyl acetate (8 mL) followed by drying in an oven at 100 °C for 1h and it was made reusable for further reactions. The purities of the synthesized chalcones were checked by their physical constants. The analytical, physical constants and mass fragments of the chalcones were presented in *Table S1*(See supplementary data).



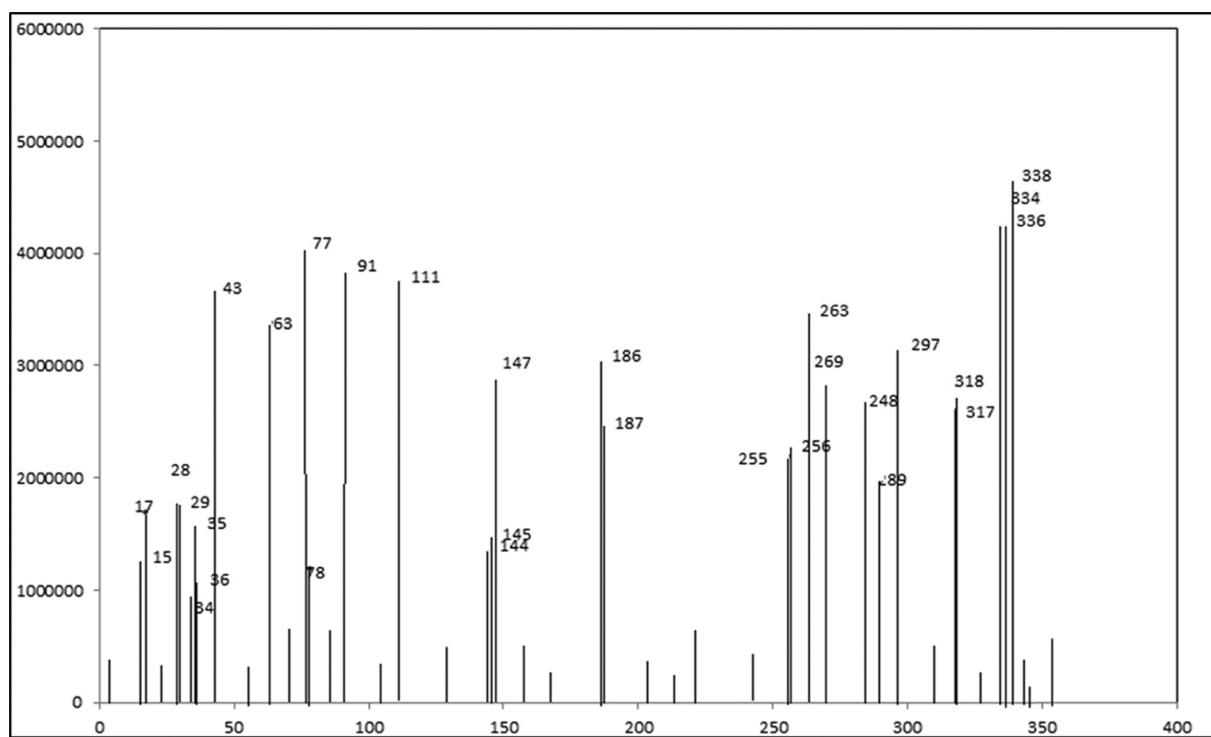
**Scheme S1.** Synthesis of chalcones.

**Table S1.** The analytical, physical constants and mass fragments chalcones

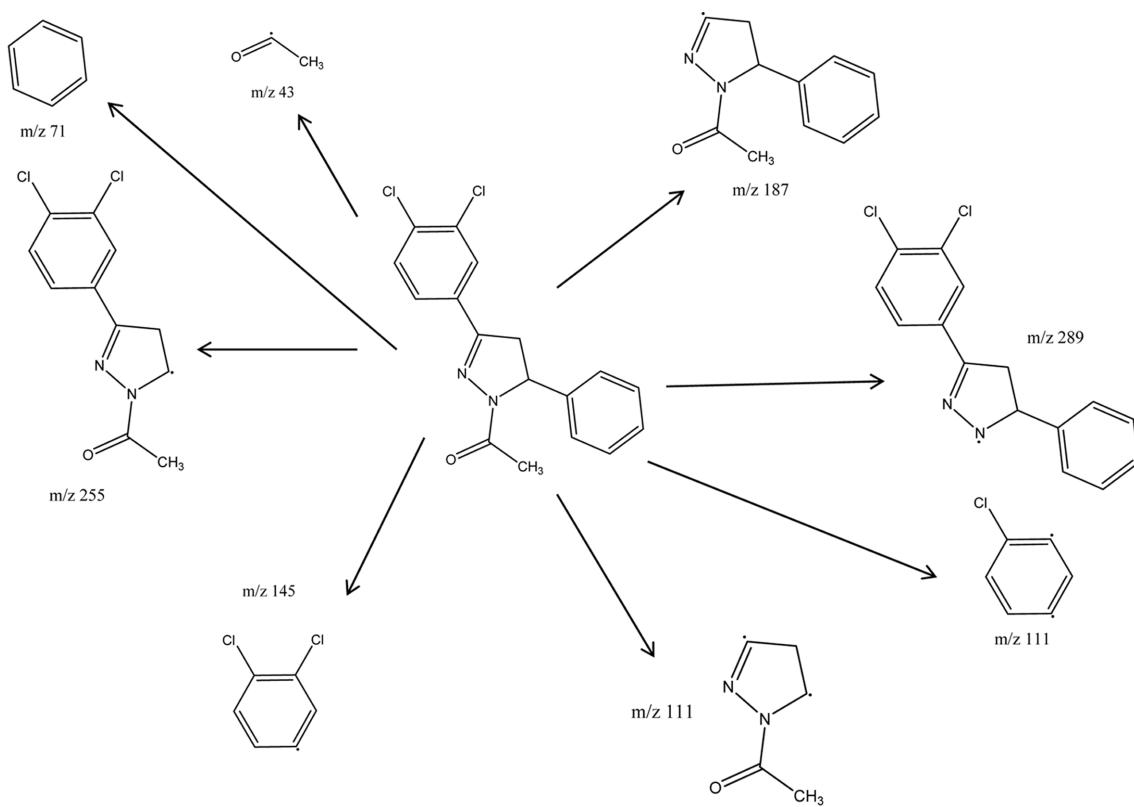
Entry	R	R'	M.W.	m.p.(°C)	Mass(m/z)
1			208	55–56 (55–56) <sup>21</sup>	208[M <sup>+</sup> ]
2		Cl-	243	116–117 (116–117) <sup>24</sup>	243[M <sup>+</sup> ], 245[M <sup>2+</sup> ]
3		H <sub>3</sub> C-	222	46–47 (46–47) <sup>24</sup>	222[M <sup>+</sup> ]
4		O <sub>2</sub> N-	253	158–159 (158–159) <sup>24</sup>	253[M <sup>+</sup> ]
5		F--	327	102–103	327[M <sup>+</sup> ], 329[M <sup>2+</sup> ], 331[M <sup>4+</sup> ]
6	Cl-	F--	360	102–103	360[M <sup>+</sup> ], 362[M <sup>2+</sup> ], 364[M <sup>4+</sup> ]
7	H <sub>3</sub> C-	F--	341	108–109	341[M <sup>+</sup> ], 343[M <sup>2+</sup> ], 345[M <sup>4+</sup> ]
8	F-	F--	345	128–129	345[M <sup>+</sup> ], 347[M <sup>2+</sup> ], 349[M <sup>4+</sup> ]
9		F--	342	141–142	342[M <sup>+</sup> ], 344[M <sup>2+</sup> ], 346[M <sup>4+</sup> ]

**Table S1.** Continued

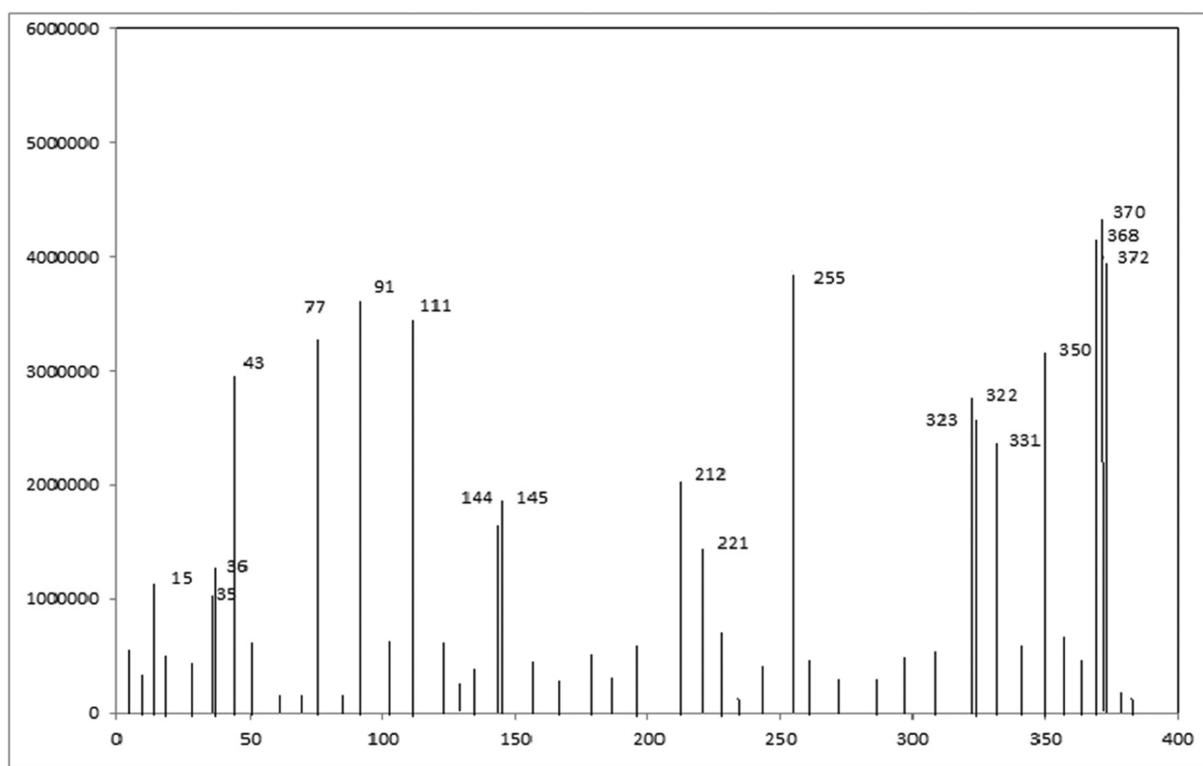
Entry	R	R'	M.W.	m.p.(°C)	Mass(m/z)
10			406	135–136	406[M <sup>+</sup> ], 408[M2 <sup>+</sup> ], 410[M4 <sup>+</sup> ]
11			224	90–91 (90–91) <sup>25</sup>	224[M <sup>+</sup> ]
12			318	122–123	318[M <sup>+</sup> ]
13			277	100–101 (100–101) <sup>22</sup>	277(M <sup>+</sup> ), 278, 280, 243, 241, 212, 198, 178, 174, 147, 146, 145, 131, 109, 107, 104, 103, 88, 78, 77, 75, 74, 73, 63, 52
14			356	168–169 (168–169) <sup>22</sup>	356(M <sup>+</sup> ), 357, 358, 360, 322, 321, 319, 165, 149, 277, 276, 275, 214, 212, 181, 147, 145, 137, 136, 124, 111, 103, 106, 102, 95, 75, 50
15			312	121–122 (121–123) <sup>22</sup>	312(M <sup>+</sup> ), 313, 315, 276, 241, 149, 137, 136, 125, 111, 102, 95, 88, 51
16			312	142–143 (142–143) <sup>22</sup>	312(M <sup>+</sup> ), 313, 315, 276, 241, 149, 137, 136, 125, 111, 102, 95, 88, 51
17			295	102–103 (102–103) <sup>22</sup>	295(M <sup>+</sup> ), 297, 299, 276, 251, 241, 213, 178, 165, 149, 137, 136, 125, 111, 102, 95, 88, 51
18			306	105–106 (105–106) <sup>22</sup>	306(M <sup>+</sup> ), 307, 308, 310, 291, 273, 271, 241, 237, 225, 206, 179, 162, 161, 149, 136, 133, 123, 109, 108, 103, 90, 89, 78, 63, 51
19			291	122–123 (122–123) <sup>22</sup>	291(M <sup>+</sup> ), 293, 295, 282, 281, 277, 275, 257, 255, 226, 221, 208, 175, 115, 109, 95, 91, 76, 65, 51
20			291	137–138 (137–138) <sup>22</sup>	291(M <sup>+</sup> ), 293, 295, 282, 281, 277, 275, 257, 255, 226, 221, 208, 175, 147, 146, 145, 118, 115, 109, 95, 91, 76, 65, 51
21			322	218–219 (218–219) <sup>22</sup>	322(M <sup>+</sup> ), 323, 325, 324, 305, 306, 304, 288, 287, 286, 283, 281, 274, 240, 224, 212, 209, 208, 193, 190, 176, 174, 172, 149, 146, 136, 135, 130, 129, 110, 109, 89, 74, 63, 51
22			322	205–206 (205–206) <sup>22</sup>	322(M <sup>+</sup> ), 323, 325, 324, 305, 288, 287, 283, 281, 274, 240, 224, 212, 208, 193, 190, 176, 174, 149, 146, 136, 130, 129, 110, 74, 63, 51
23			337	116–117 (116–117) <sup>23</sup>	337(M <sup>+</sup> ), 339, 341, 324, 287, 275, 149, 129, 101, 93, 74, 63, 51



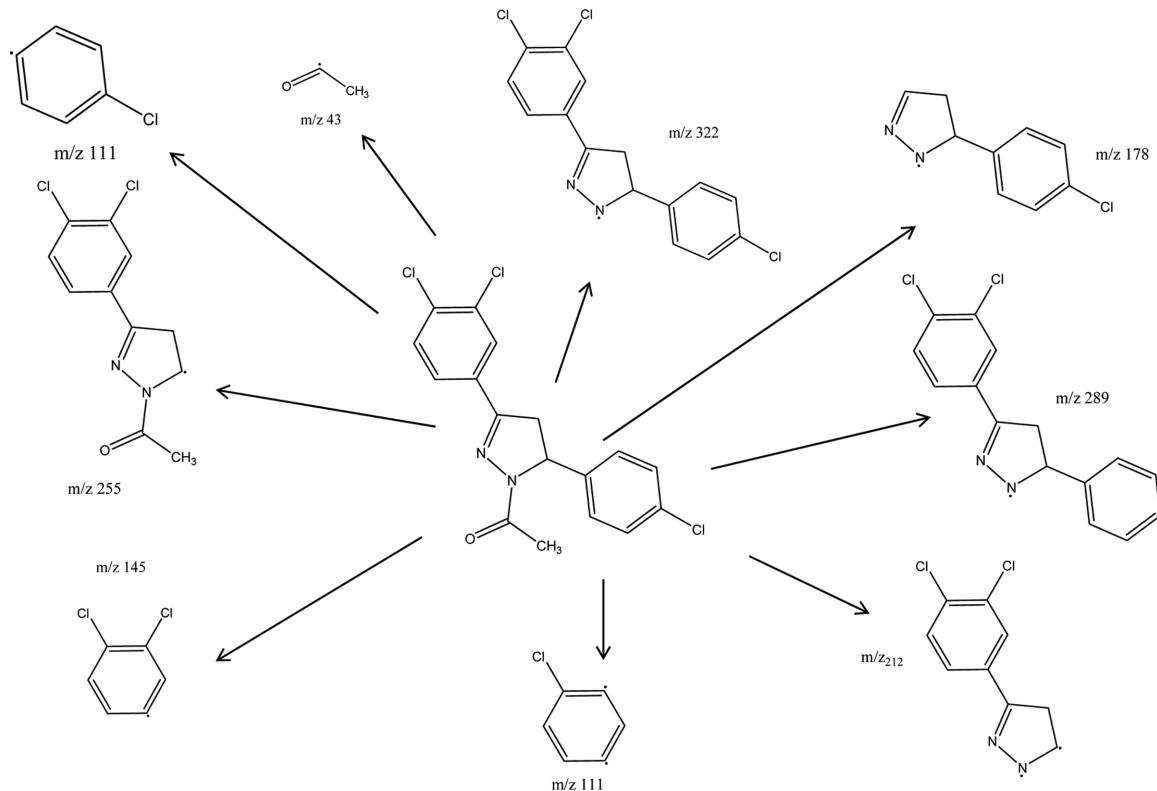
**Scheme S2.** Ms spectra of compound 13.



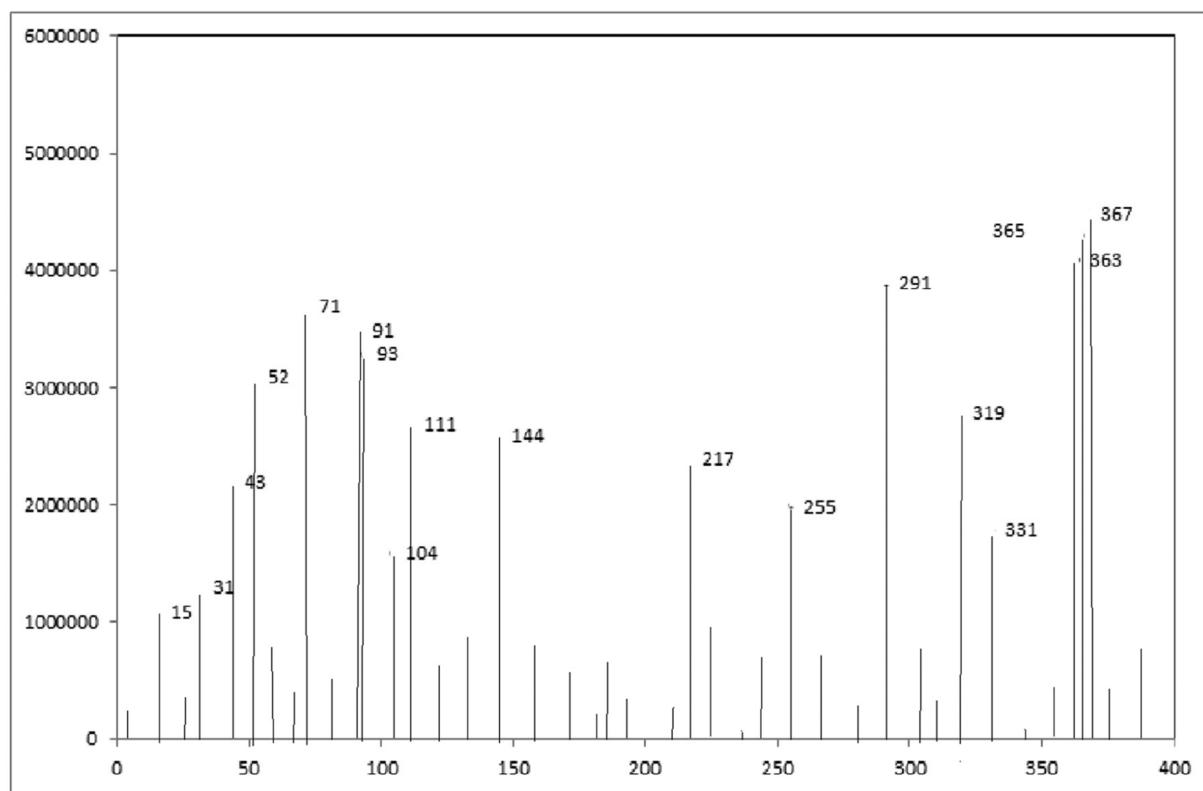
**Scheme S3.** Mass fragments of compound 13.



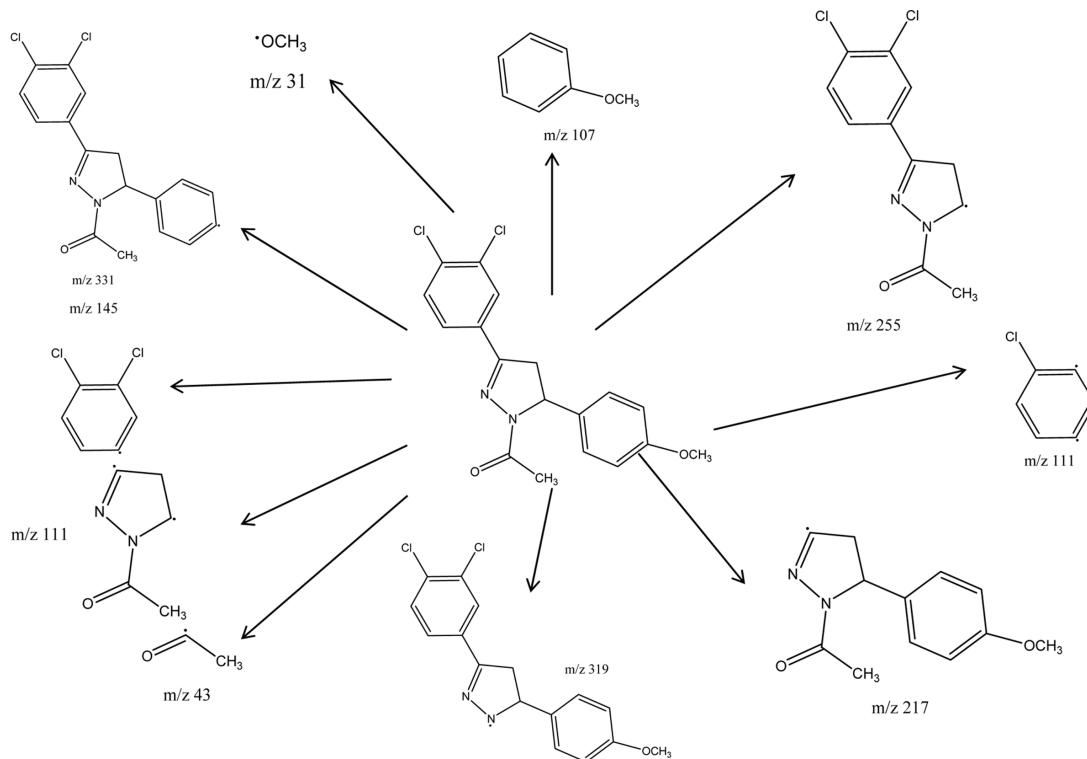
**Scheme S4.** Mass spectra of compound 16.



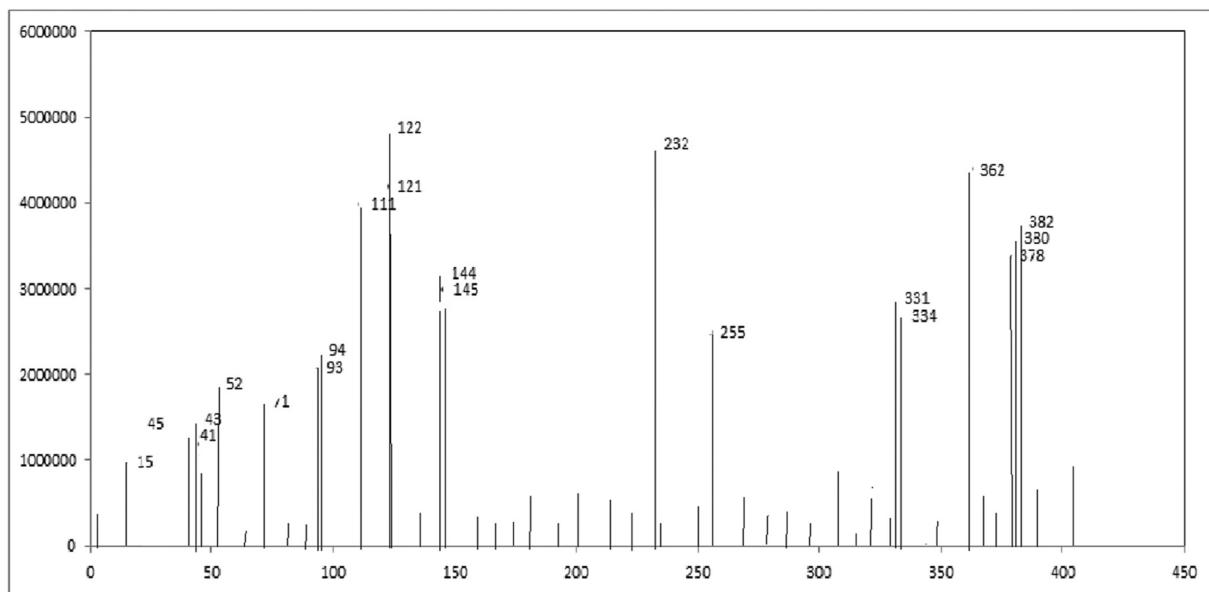
**Scheme S5.** Mass fragments of compound 16.



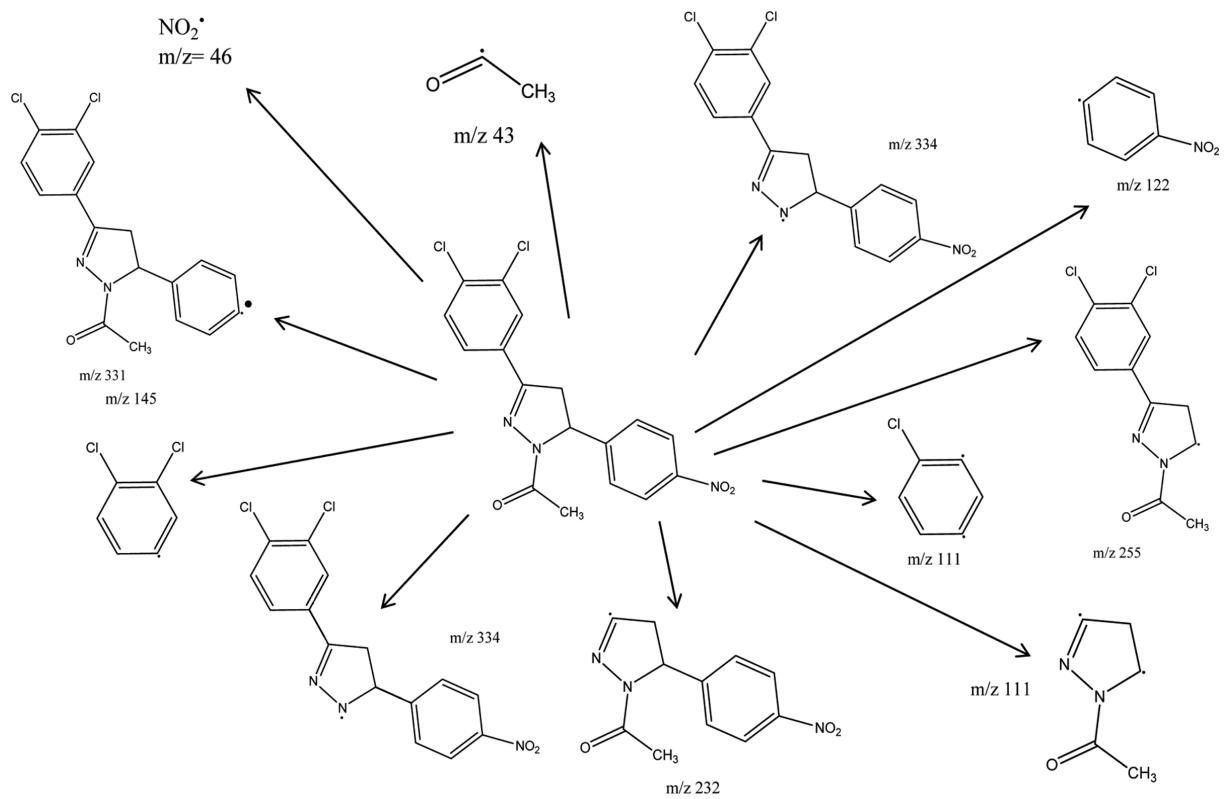
**Scheme S6.** Mass spectra of compound 18.



**Scheme S7.** Mass fragments of compound 18.



**Scheme S8.** Mass spectra of compound 22.



**Scheme S9.** Mass spectra of compound 22.