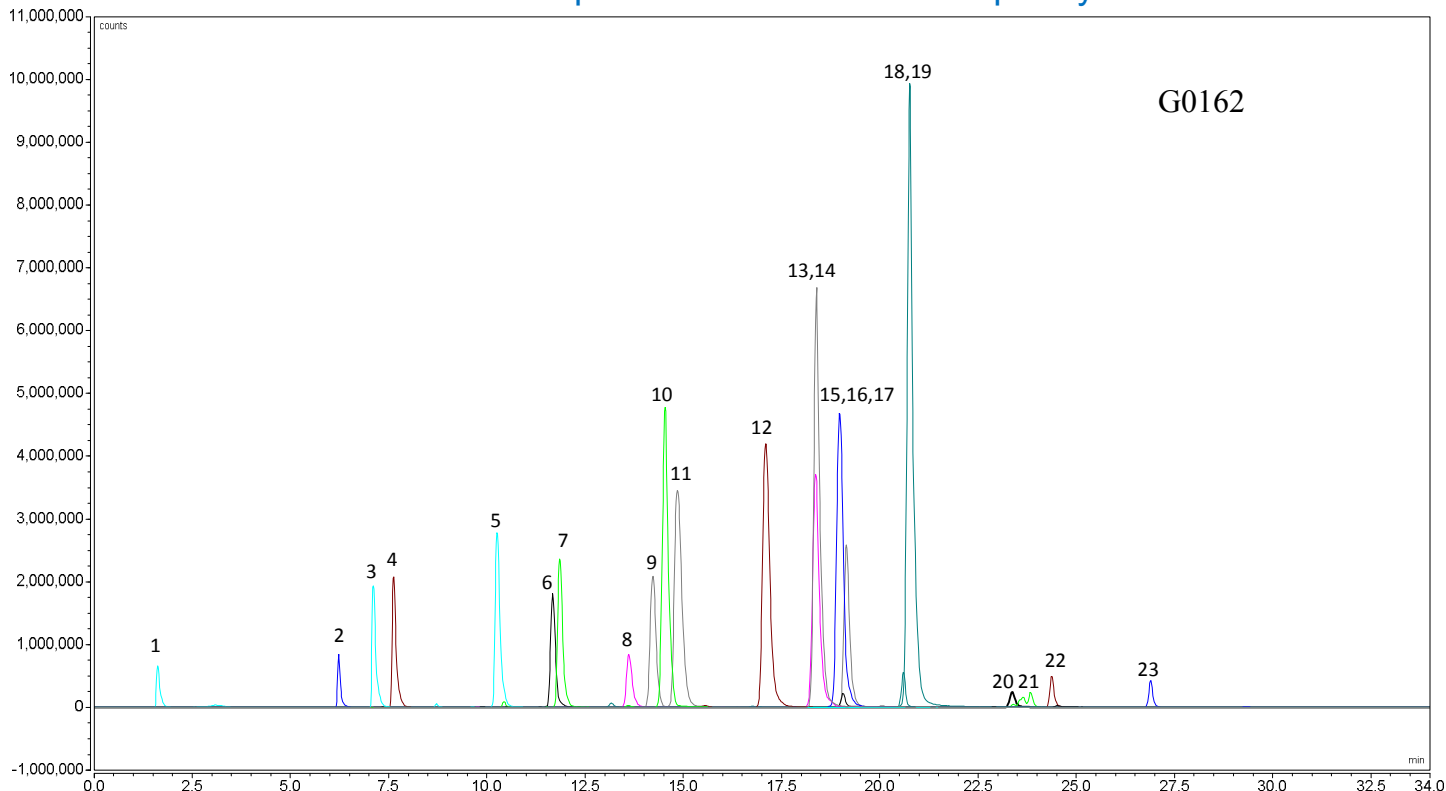


Pesticides Separation on HALO 90Å Biphenyl



TEST CONDITIONS:

Column: HALO 90Å Biphenyl, 2.7 μm , 2.1 x 100 mm
Part Number: 92812-611

A= Water/0.1% formic acid/4 mM ammonium formate

B= Acetonitrile/0.1% formic acid/4 mM ammonium formate

Gradient:

Time (min.)	%B
0.00	0
1.01	15
4.00	35
5.00	62
30.00	100
34.00	100

Flow Rate: 0.2 mL/min

Pressure: 89 bar (initial)

Temperature: 40 °C

Injection Volume: 1 μL

Sample Solvent: acetonitrile

Detection: UV 254 nm

Data Rate: 10 Hz

LC System: Shimadzu Nexera

MS System: Thermo Fisher Orbitrap VelosPro ETD

ESI: +3.8 kV

Scan range: 150-1000 m/z

Scan rate: 1.33 pps

Capillary: 350 °C

Sheath gas: 35

Auxiliary gas: 10

Scan Time: 2 μs scans/50 ms max inject time

Heater Temperature: 150 °C

A mixture of pesticides with a wide range of polarities is separated with high efficiency using a HALO 90Å Biphenyl column. Closely-eluting and co-eluting compounds are easily identified using mass spectrometry detection, and quantified using extracted-ion chromatograms (see page 2 for peak identities). Pesticides, such as these, are commonly screened for in medical marijuana samples.

PEAK IDENTITIES:

	Compound	m/z	Retention (min)
1	Daminozide	161.096	1.616
2	Flonicamid	230.000	6.224
3	Thiamethoxam	292.000	7.109
4	Imidacloprid	256.050	7.631
5	Paclobutrazol	294.130	10.256
6	Fenhexamid	302.079	11.678
7	Myclobutanil	289.129	11.849
8	Bifenazate	301.150	13.610
9	Dimethomorph Isomer 1	388.130	14.226
10	Spirotetramat	374.190	14.535
11	Dimethomorph Isomer 2	388.130	14.846
12	Spinosad A	732.480	17.089
13	Spinosad D	746.490	18.363
14	Trifloxystrobin	409.100	18.391
15	Spinetoram	748.520	18.970
16	Pyrethrin II	373.200	19.068
17	Piperonyl butoxide	356.240	19.151
18	Pyrethrin I	329.210	20.594
19	Etoxazole	360.180	20.759
20	Abamectin A	895.500	23.370
21	Cypermethrin	433.110	23.610
22	Bifenthrin	440.160	24.370
23	Acequinocyl	407.230	26.890
observed in negative ion mode	Fludioxonil	247.048	9.763

An important advantage of the HALO 90Å Biphenyl column is that it can be used with 100% aqueous mobile phase without pore dewetting and loss of retention. This is especially useful for very polar pesticides, which are sometimes unretained or poorly retained on other column phases.