

Rapid Analysis of 125 Pesticides from Groundwater by UHPLC-MS/MS using Luna[®] Omega 1.6 μm C18

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Overview

According to the USGS, nearly 95 percent of people who live in agricultural regions rely on groundwater for drinking water, which is problematic in that these regions typically are associated with heavy pesticide use. Due to this reliance on groundwater and the continual increase in nationwide pesticide usage, it becomes increasingly more important to monitor potentially contaminated aquifers for pesticides and some of their key degradants. With this application, 125 pesticides and degradants can be quantified at approximately 10 ng/L in groundwater using UHPLC-MS/MS with a Luna Omega 1.6 μm C18 column. The high resolution afforded by the Luna Omega C18 gives great separation, allowing the mass spectrometer to maximize dwell time and achieve very low detection limits in a short run of 8 minutes.

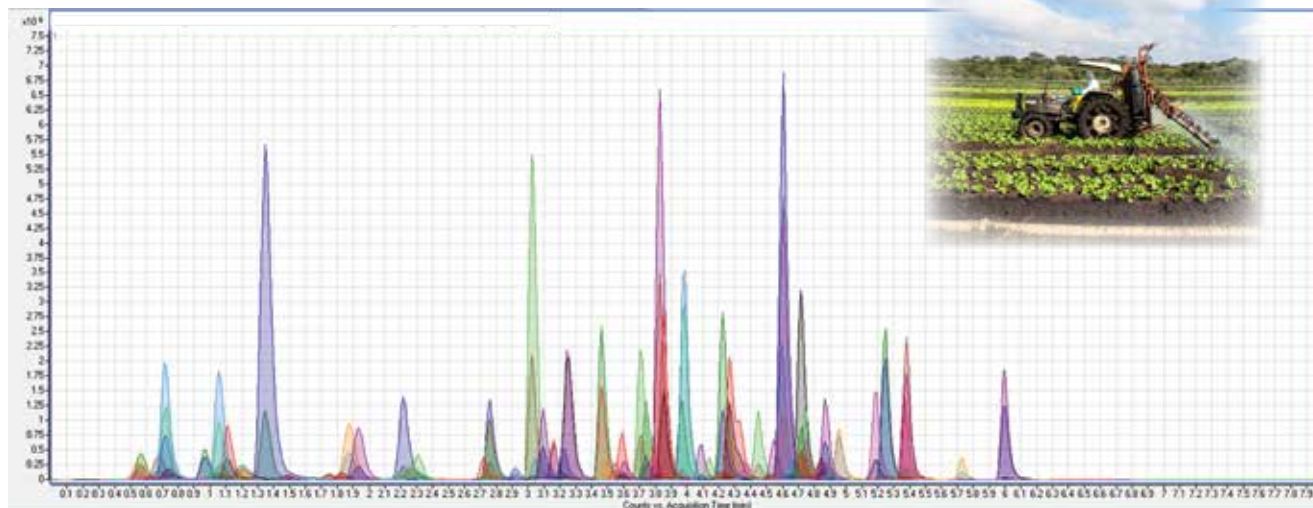
Acknowledgement

We would like to provide special thanks to Weck Laboratories for contributing this application.

Column: Luna Omega 1.6 μm C18
Dimensions: 50 x 2.1 mm
Part No.: 00B-4742-AN
Mobile Phase: A: 2.5 mM Ammonium acetate + 0.05% Acetic acid in water
 B: 0.05% Acetic acid in acetonitrile

Gradient:	Time (min)	% B
	0.00	15
	0.50	15
	2.50	40
	5.75	75
	6.25	100
	7.00	100
	7.10	15
	8.00	15

Injection: 75 μL - Direct Inject
Flow Rate: 0.55 mL/min
Temperature: 45 °C
Detection: Agilent 6495 Triple Quadrupole LC/MS
Analytes: 125 Pesticides and Degradants List (see reverse)



App ID 23803



APPLICATION

Luna Omega Ordering Information

1.6 µm Minibore Columns (mm)					SecurityGuard™ ULTRA Cartridges†
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
Polar C18	00A-4748-AN	00B-4748-AN	00D-4748-AN	00F-4748-AN	AJO-9505
PS C18	00A-4752-AN	00B-4752-AN	00D-4752-AN	00F-4752-AN	AJO-9508
C18	00A-4742-AN	00B-4742-AN	00D-4742-AN	00F-4742-AN	AJO-9502

† SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

5 µm particle size Luna Omega columns are also available at www.phenomenex.com/Luna

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125 Pesticides Mix

2,4,5-T	Dicrotophos	Myclobutanil
2,4,5-TP	Difenoconazole	Nicosulfuron
2,4-D	Dimethenamid	Norflurazon
2,4-DB	Dimethenamid ESA	Norflurazon-desmethyl
Acetamidprid	Dimethenamid OXA	Oxadiazon
Acetochlor	Dimethoate	Oxydemeton-methyl
Acetochlor ESA	Dinotefuran	Parathion-methyl
Acetochlor OXA	Disulfoton Sulfone	Parathion-methyl Oxon
Alachlor	Diuron	Pendimethalin
Alachlor ESA	Ethalfuralin	Phorate
Alachlor OXA	Ethofumesate	Picloram
Aldicarb Sulfone	Flufenacet OXA	Picoxystrobin
Aldicarb Sulfoxide	Flumetsulam	Prometon
Atrazine	Flutriafol	Prometryn
Azoxystrobin	Fluxapyroxad	Propachlor
Bensulfuron-methyl	Fonofos	Propachlor ESA
Bensulide	Halosulfuron-methyl	Propachlor OXA
Bentazon	Hexazinone	Propazine
Boscalid	Hydroxyatrazine	Propiconazole
Bromacil	Imazamethabenz acid	Pyraclostrobin
Bromoxynil	Imazamethabenz-methyl	Pyroxasulfone
Carbaryl	Imazamox	Saflufenacil
Carbendazim	Imazapic	Sedaxane
Carbofuran	Imazapyr	Siduron
Chlorantraniliprole	Imazaquin	Simazine
Chlorimuron-ethyl	Imazethapyr	Sulfometuron-methyl
Chlorpyrifos	Imidacloprid	Tebuconazole
Chlorpyrifos Oxon	Isoxaflutole	Tebupyrifos
Clomazone	Linuron	Tembotrione
Clopyralid	Malathion	Terbufos
Clothianidin	MCPA	Tetraconazole
Cyanazine	MCPB	Thiacloprid
Cyantraniliprole	MCPP	Thiamethoxam
Cyfluthrin	Mesotrione	Thifensulfuron-methyl
DEDI Atrazine	Metalaxyl	Thiobencarb
Deisopropylatrazine	Metolachlor	Tolfenpyrad
Desethylatrazine	Metolachlor ESA	Triallate
Diazinon	Metolachlor OXA	Thiobencarb
Diazinon Oxon	Metribuzin	Tolfenpyrad
Dicamba	Metribuzin DA	Triallate
Dichlorprop	Metribuzin DADK	
Dichlorvos	Metsulfuron-methyl	



If Luna analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

Terms and Conditions

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Disclaimer

Comparative separations may not be representative of all applications

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