Agilent

Agilent MassHunter Productivity App for Targeted Pesticide Screening by LC/TQ

Reference Guide

Overview

MassHunter Productivity App for Pesticide Screening by LC/TQ

The Productivity App for Pesticide Screening by LC/TQ offers a comprehensive solution for targeted analysis of pesticides in chemical analysis labs in environmental, food, and other industries.

The acquisition method provided with the Productivity App for Pesticide Screening by LC/TQ contains a comprehensive LC dMRM pesticide database for 702 compounds. Each compound in the database includes two to four unique precursor/product ion transitions.

The availability of multiple MRM transitions helps to address matrix interferences. It also helps to accurately identify compounds that may have MRMs in common.

The database and method included with the Productivity App for Pesticide Screening by LC/TQ minimizes method development time for pesticide analysis when used with the recommended LC/MS configuration and accessories.

System Requirements

The Productivity App for Pesticide Screening by LC/TQ requires:

- Agilent 6460 or 6470 Triple Quad LC/MS or Ultivo LC/TQ
- Windows 7 (64-bit) or Windows 10
- MassHunter Data Acquisition for Triple Quad LC/MS B.08.00 or higher (optional)
- MassHunter Quantitative Analysis B.09.00 or higher

The Productivity App can run on a MassHunter Data Acquisition system or an offline system in which MassHunter Quantitative Analysis is installed.

Method Setup

Retention times (RTs) for the pesticide compounds in the included dMRM database were estimated based on the conditions described in this section.

A number of factors can cause your retention times to differ from those determined by Agilent. These factors include different instrument delay volumes, dead volumes, or configuration changes. Any deviation from the configuration described in this document can change the retention times. With the configuration described here, retention times are expected to be stable within a window of less than ± 0.5 minutes for the majority of compounds.

System Configuration

- Agilent 1290 Infinity II UHPLC system that includes:
  - Agilent 1290 Infinity II Binary Pump (G7120A)
  - Agilent 1290 Infinity II MultiSampler (G7167B) equipped with a 20 µL injection loop
  - Agilent 1290 Infinity II MCT (G7116B)
- Agilent Ultivo LC/TQ system equipped with Agilent Jet Stream (AJS) electrospray ionization source.

Tubing

Table 1 Tubing used in method

Connection	Description	Agilent Part Number
1	Stainless Steel, 0.17 mm ID × 600 mm length	5067-4670
2	Stainless Steel, 0.12 × 600 mm	5067-4669
3	A-Line Quick Connect Fitting Assembly, Stainless Steel, 0.12 × 105 mm	5067-5957
4	PEEK Tubing, 0.12 mm ID, 500-100 mm length	0890-1915

Agilent 1290 UHPLC parameters

Table 2 UHPLC Parameters

Parameter	Value
Guard Column	Agilent ZORBAX Eclipse Plus C18, 2.1 × 5 mm, 1.8 µm (p/n 821725-901)
Column	Agilent ZORBAX RRHD Eclipse Plus C18, 3.0 × 150 mm, 1.8 µm (p/n 959759-302)
Mobile phase (A)	Water, 4.5mM NH_4Formate + 0.5mM NH_4F + 0.1% formic acid
Mobile phase (B)	MeOH, 4.5mM NH_4Formate + 0.5mM NH_4F + 0.1% formic acid
Column temperature	45°C
Auto sampler temperature	6°C
Needle wash	10 seconds (80% MeOH /20% water)
Flow rate	0.45 mL/mins

Table 3 LC Gradient Program

Time (minute)	%B
0.00	2
0.50	2
1.00	50
4.00	65
16.0	100
18.0	100
18.1	2
20.0	2
Post run time	4 minutes

Master Methods

Master methods for Targeted Pesticide Screening can be found post-installation in the folder **D:\MassHunter\Methods\Productivity App**.

These master methods are included:

Table 4 Targeted Pesticide Screening

MassHunter program	Method
Data Acquisition for Triple Quad LC/MS	• Pesticide Screening Acquisition master method • Default shutdown method
Quantitative Analysis	• Pesticide Screening Analysis master method

In This Book

This Reference Guide provides method set up information for Targeted Pesticides Screening and the instrument conditions that were used to set retention times for the included database.

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