Increase your HPI IQ with the Agilent iQ

The intelligent LC MS for the HPLC Chemist

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DE44222.7462037037

https://blog.agilent.com/2017/09/26/agilent-drives-a-new-chemical-industry-standard/?from=

Agilent OpenLab

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LC/MSD iQ

Agilent OpenLab

Pharmaceutical | **Chemical** | Food | Academia

- Mass confirmation, sample purity, reaction monitoring
- Method development
- QA/QC

Introducing the InfinityLab LC/MSD iQ

Agilent OpenLab

- Intuitive quadrupole
- Self-aware, self-driving
- Robust
- Designed for non-experts

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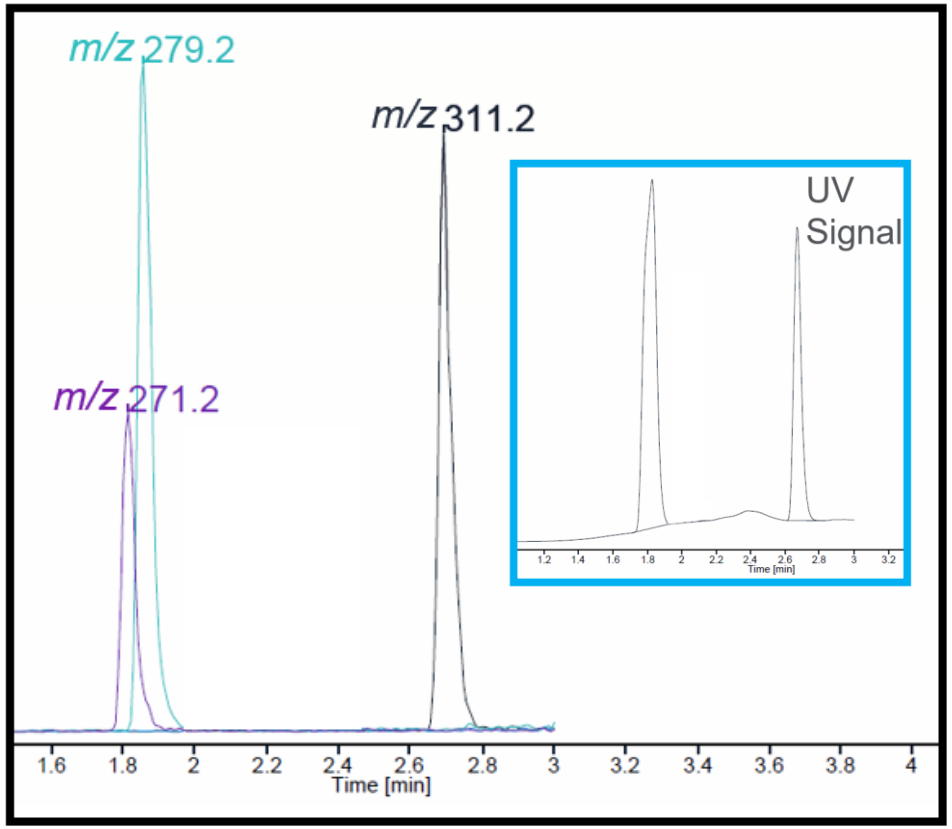
MS information Adds Certainty, Clarity and Confidence to Results

Agilent OpenLab

Only **two** peaks are detected in the UV

Sample actually contains **three** compounds

With the ability to extract single ion chromatograms (EIC), the MS can detect separate compounds co-eluting in the UV



Agilent

LC/MSD iQ Design

- Small and compact
- Same size as LC module
- Integrated with LC stack
- Uses same power outlets as LC modules
- No costly electrical upgrades
- Self-ranging power supply

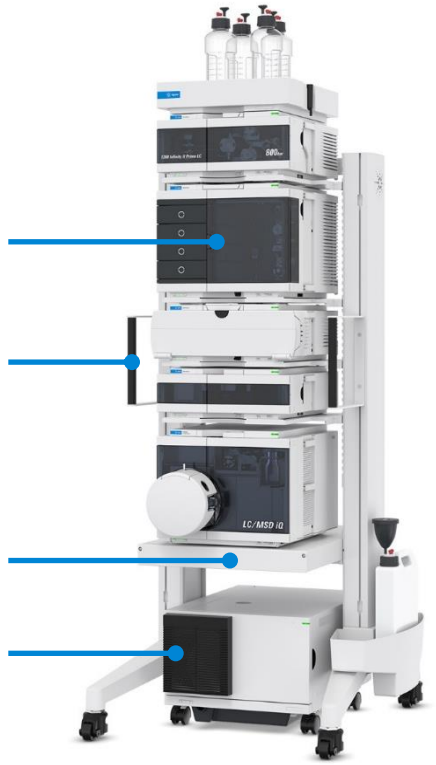
Add Flexibility and Ergonomics with Flex Bench MS

More ergonomic and convenient access

Movable to key project locations

Extendable shelf for mass spec

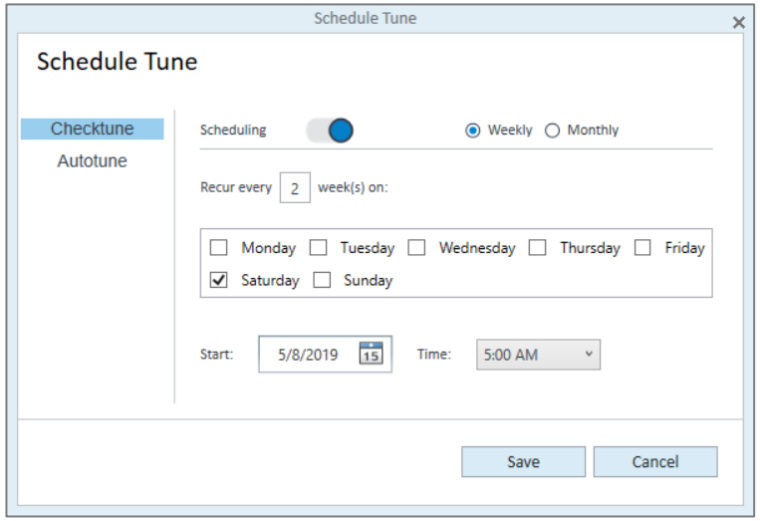
Integrated Quiet Cover



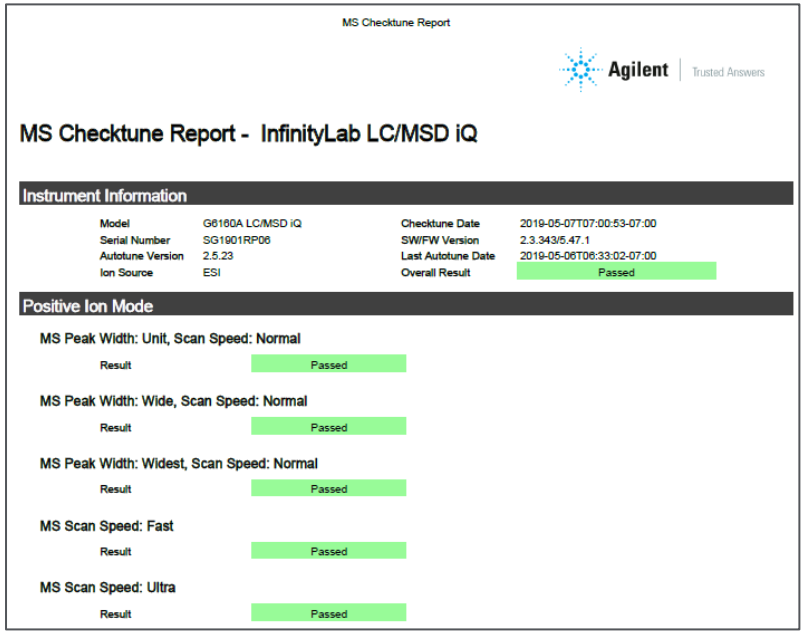
Agilent OpenLab

Simplified AutoTuning

Scheduled during instrument idle time



Simple to read reports



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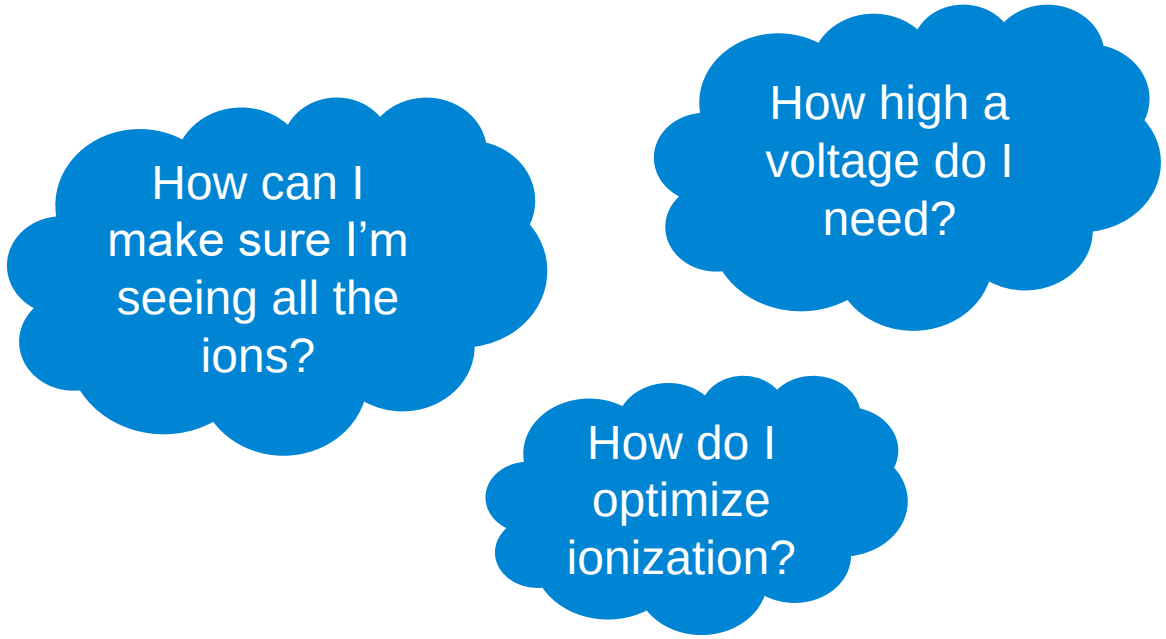
Simplified MS Method Development

Agilent OpenLab

Auto Acquire



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Simplified MS Method Development

Auto Acquire

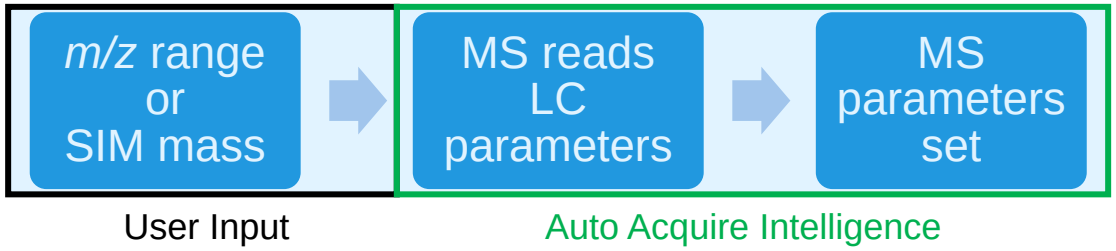
Agilent OpenLab

Intuitive MS

Auto Acquire simplifies acquisition process

Just enter mass information

Auto Acquire



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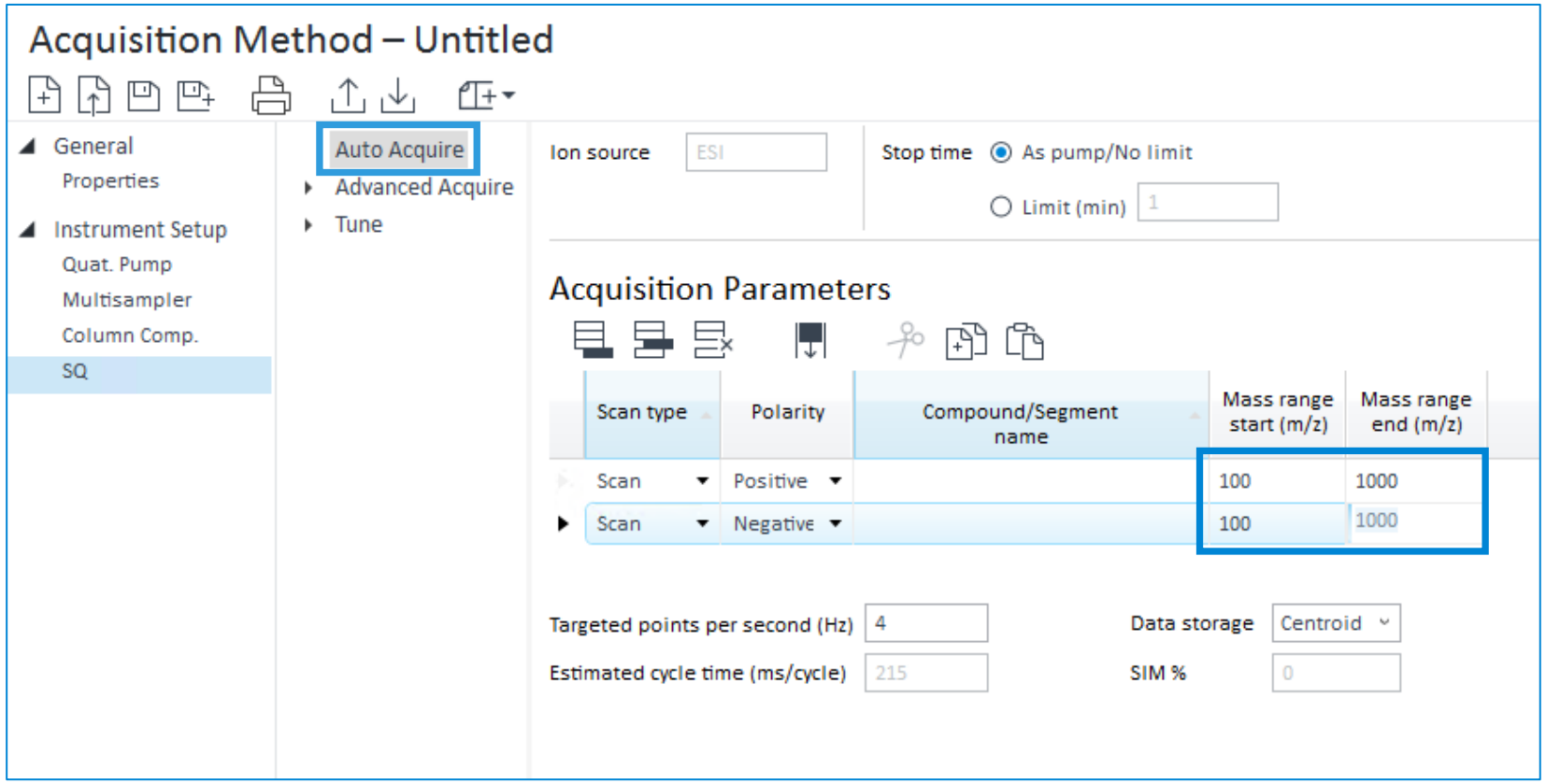
Auto Acquire

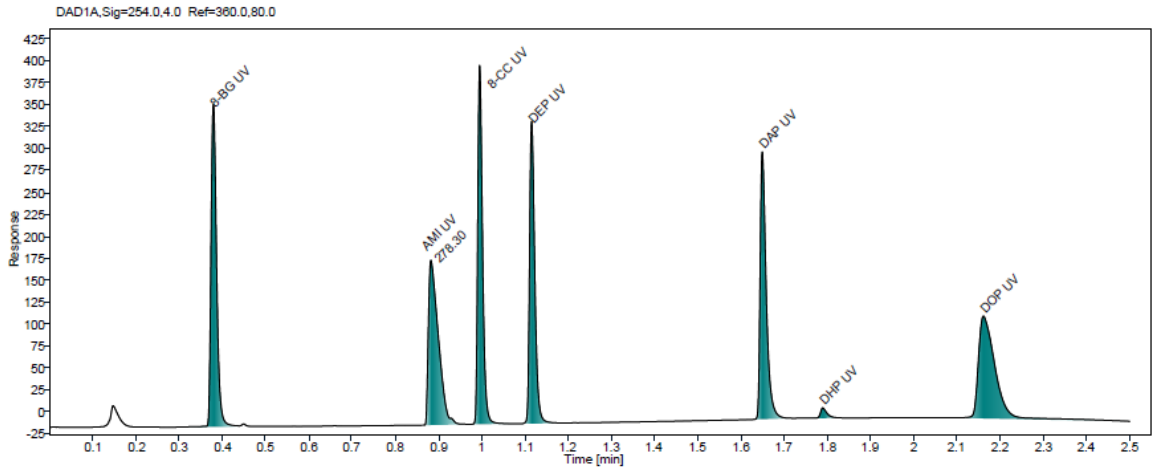


New System Suitability Test Mix

Agilent OpenLab

- Functional test of LC system, column, mass spectrometer and solvents
- Report evaluates sensitivity, peak capacity, peak shape, resolution
- Positive and negative ion mode tested
- Option for full scheduling & automation

Sample name:	Agilent Sys Suit	**Injection date:**	5/16/2019 10:57:34 AM	**Acq. operator:**	Admin
Instrument:	1290 LC/MSD iQ	**Location:**	P1-A4	**Injection volume:**	0.300
Analysis:		**Sample:**		**Instrument status:**	**Instrument conformity pass**



Instrument stability results

Cmp	RT (min)	Ref.	Deviation	Dev. limit	Status
8-BG UV	**0.38**		0.02	3.00	**Pass**
8-BG EIC	**0.40**		0.03	3.00	**Pass**
AMI UV	**0.88**		0.33	3.00	**Pass**
DAP EIC	**1.66**		0.24	3.00	**Pass**
DHP EIC	**1.80**		0.11	3.00	**Pass**
DOP UV	**2.16**		0.09	3.00	**Pass**
DOP EIC	**2.19**		0.15	3.00	**Pass**

Peak capacity results

Cmp	Resolution	Ref.	Deviation	Dev. limit	Status
DEP UV	**5.850**	**5.85**	0.00	5.00	**Pass**

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LC/MSD iQ Reproducibility

Agilent OpenLab

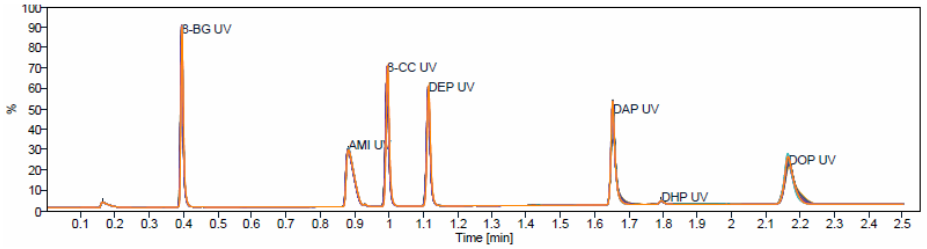
100 injections of system suitability test mix

UV and MS retention time and peak area RSDs

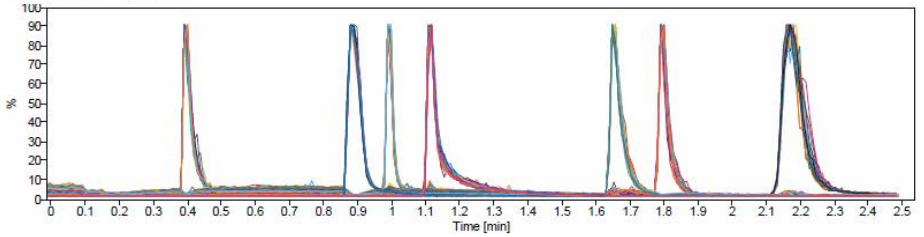
- UV and MS retention time RSDs are <1%
- UV peak area RSDs are <2%
- MS peak area RSDs are <10%

8-BG UV	RT RSD: .14	RT RSD <1%	Peak RSD: 1.274	Peak RSD <2%
AMI UV	RT RSD: .074	RT RSD <1%	Peak RSD: 1.246	Peak RSD <2%
8-CC UV	RT RSD: .058	RT RSD <1%	Peak RSD: 1.243	Peak RSD <2%
DEP UV	RT RSD: .044	RT RSD <1%	Peak RSD: 1.268	Peak RSD <2%
DAP UV	RT RSD: .023	RT RSD <1%	Peak RSD: 1.284	Peak RSD <2%
DHP UV	RT RSD: .028	RT RSD <1%	Peak RSD: 1.984	Peak RSD <2%
DOP UV	RT RSD: .051	RT RSD <1%	Peak RSD: 1.272	Peak RSD <2%
8-BG EIC	RT RSD: .31	RT RSD <1%	Peak RSD: 4.172	Peak RSD <10%
AMI EIC	RT RSD: .197	RT RSD <1%	Peak RSD: 1.702	Peak RSD <10%
8-CC EIC	RT RSD: .139	RT RSD <1%	Peak RSD: 4.345	Peak RSD <10%
DEP EIC	RT RSD: .124	RT RSD <1%	Peak RSD: 4.967	Peak RSD <10%
DAP EIC	RT RSD: .078	RT RSD <1%	Peak RSD: 7.471	Peak RSD <10%
DHP EIC	RT RSD: .081	RT RSD <1%	Peak RSD: 6.895	Peak RSD <10%
DOP EIC	RT RSD: .29	RT RSD <1%	Peak RSD: 6.362	Peak RSD <10%

UV Chromatograms



EIC MS Chromatograms



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Small Molecule Sensitivity (Etyhlene Glycol)

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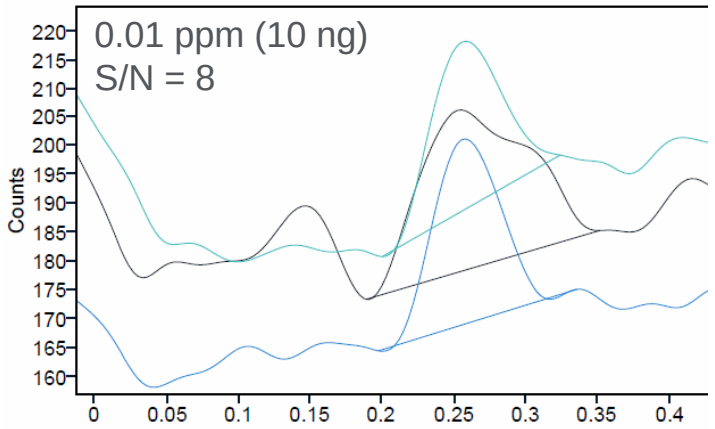

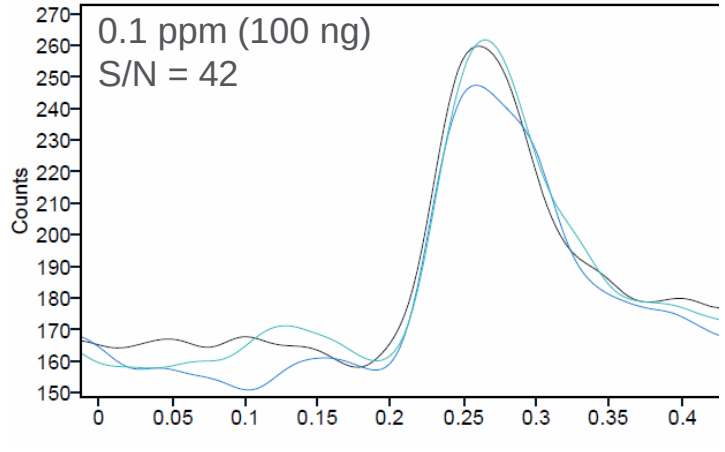

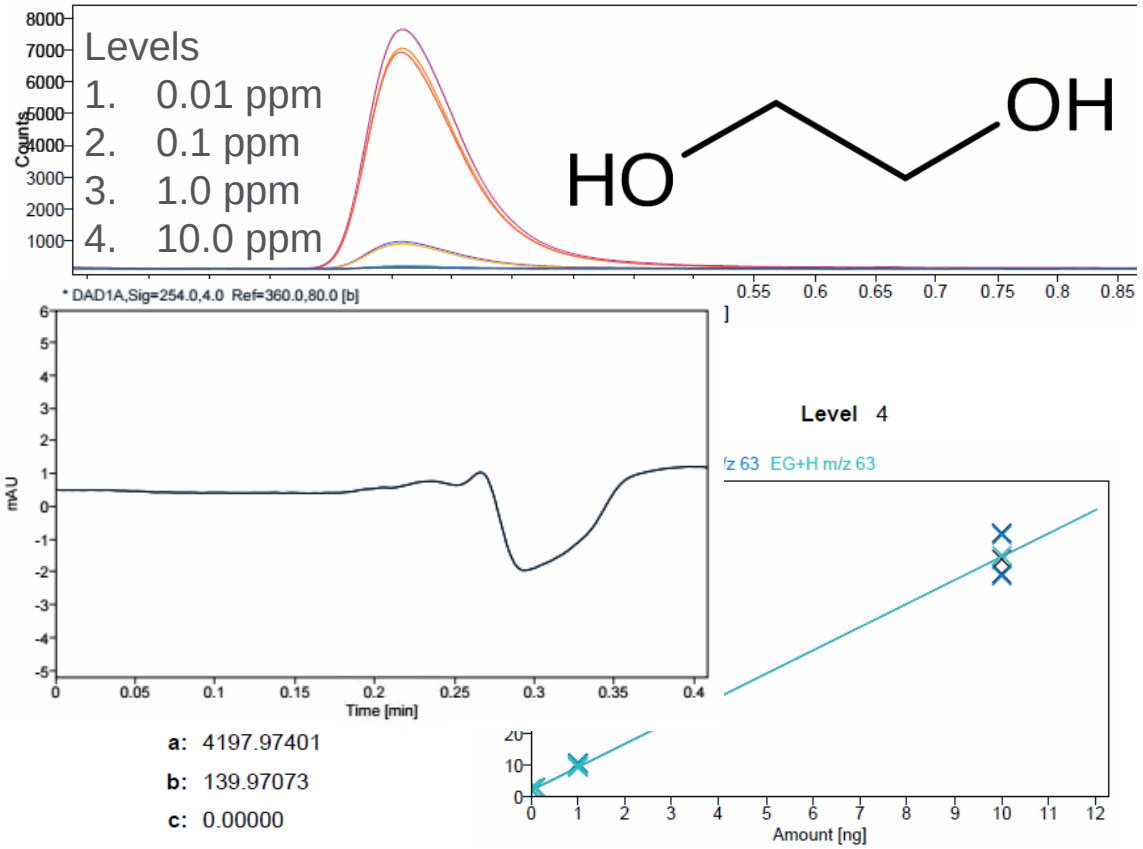

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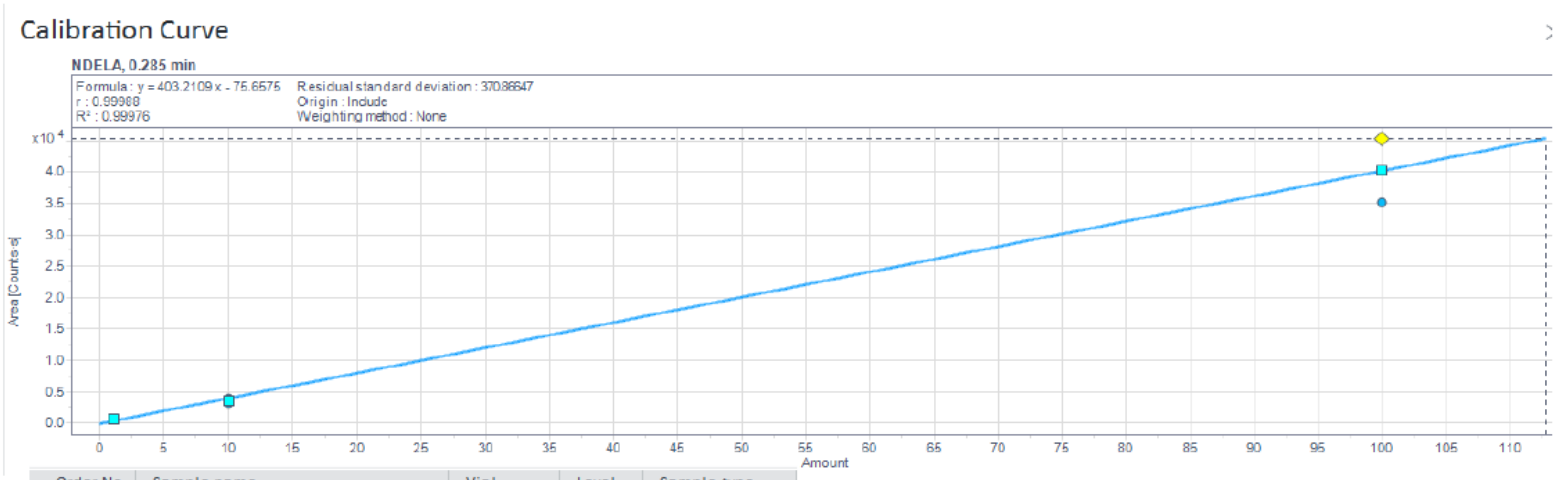
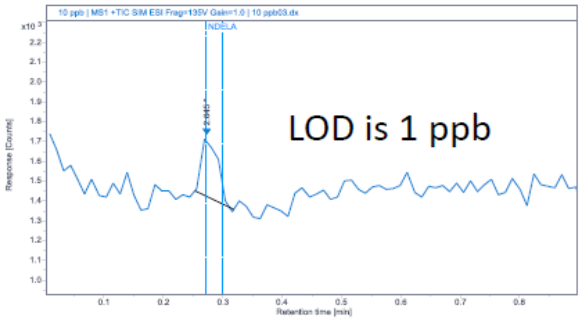
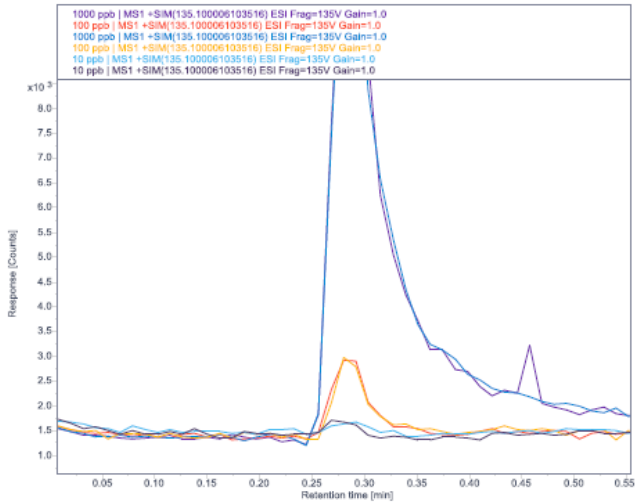
NDELA

N-Nitrosodiethanolamine



Order No	Sample name	Vial	Level	Sample type
1	blank	P1-A1		Blank
2	blank 2	P1-A1		Blank
3	1 ppb	P1-A2	1	Cal. Std.
4	1ppb	P1-A2	1	Cal. Std.
5	10 ppb	P1-A3	2	Cal. Std.
6	10 ppb	P1-A3	2	Cal. Std.
7	100 ppb	P1-A4	3	Cal. Std.
8	100 ppb	P1-A4	3	Cal. Std.

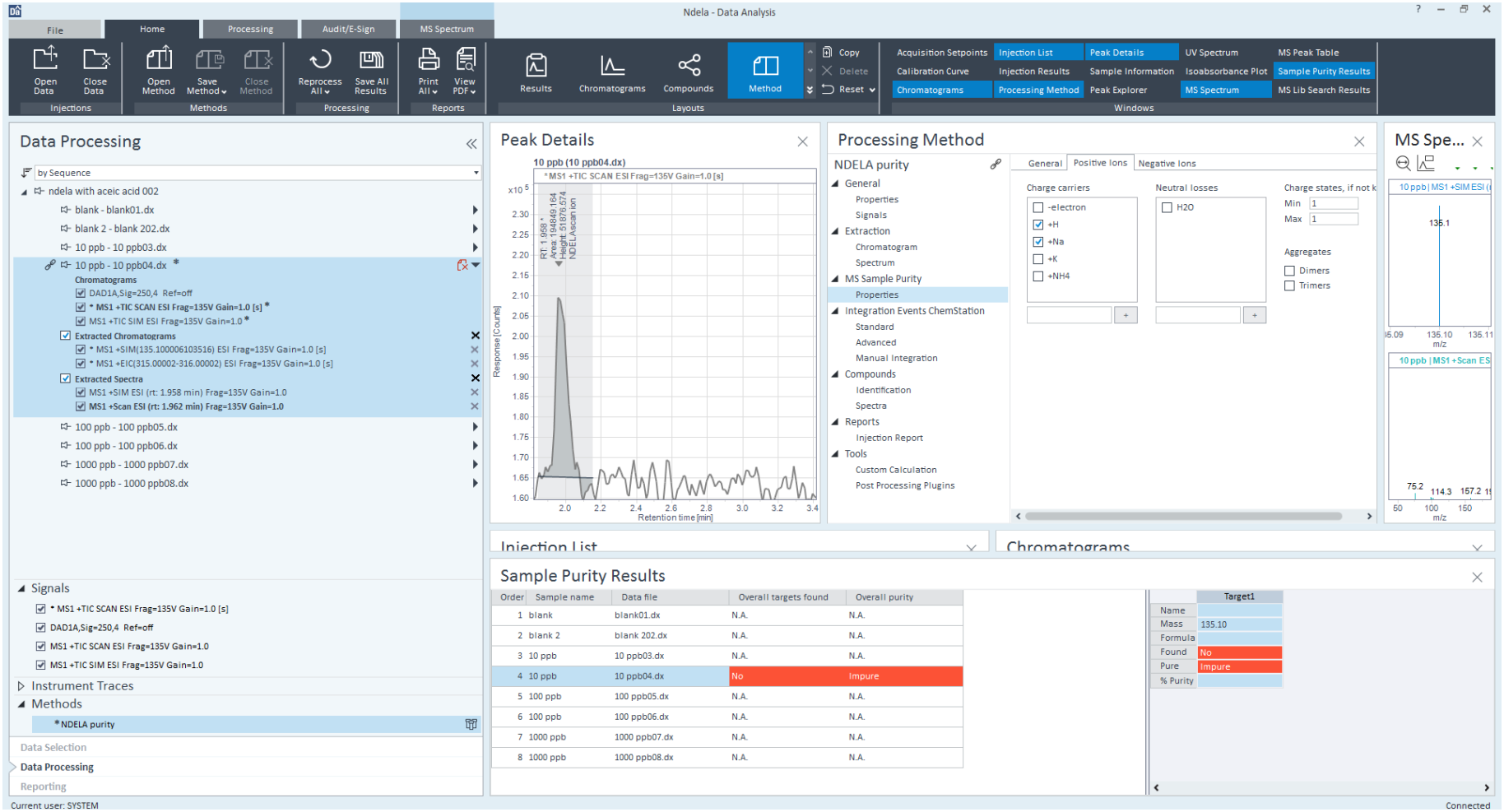




100 ppb standard

Sample Purity

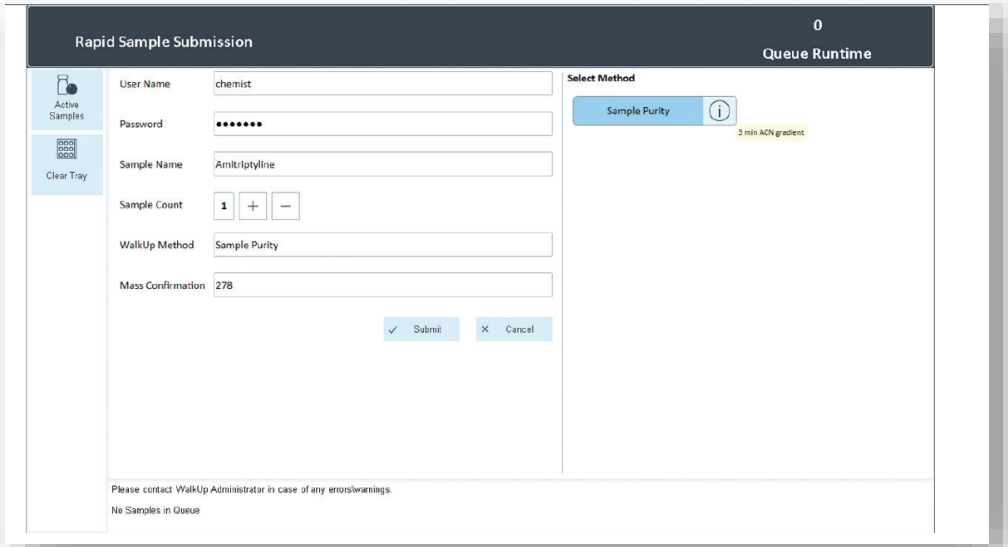
With the same data as quantitation

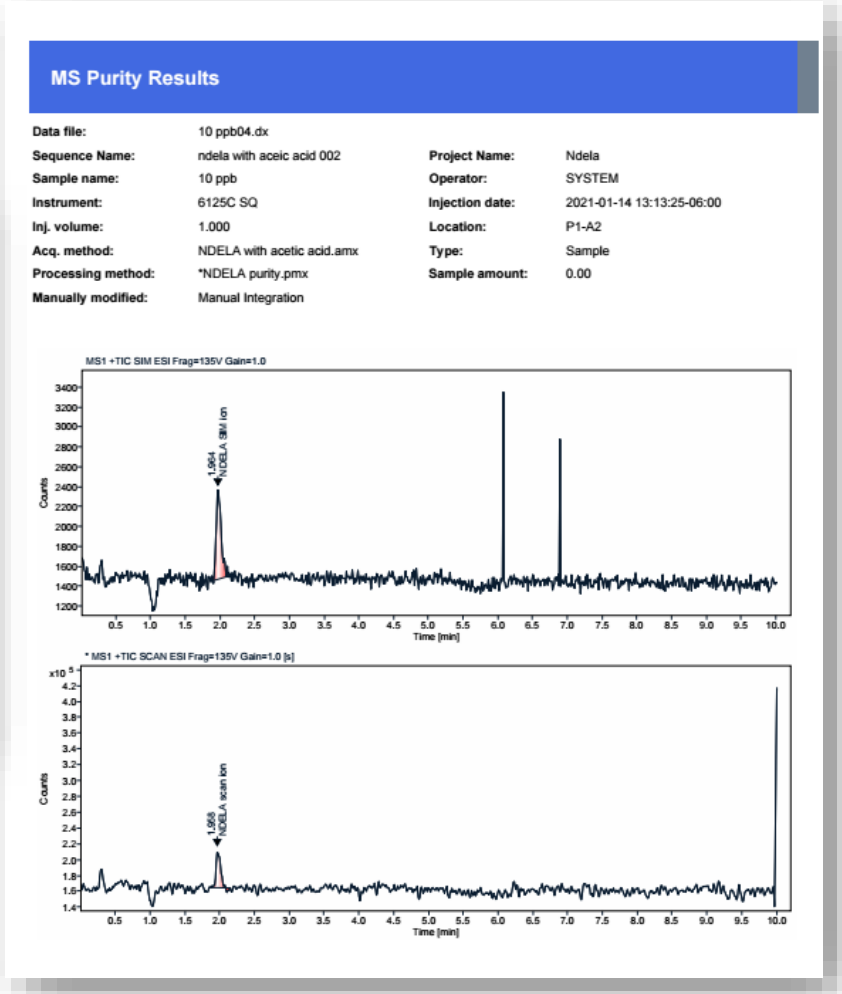


Walk up software allows anyone to use

Easy sample entry and reporting

Agilent OpenLab





Target found in analysis	Purity (%)	Purity result
Yes	85.44	Impure

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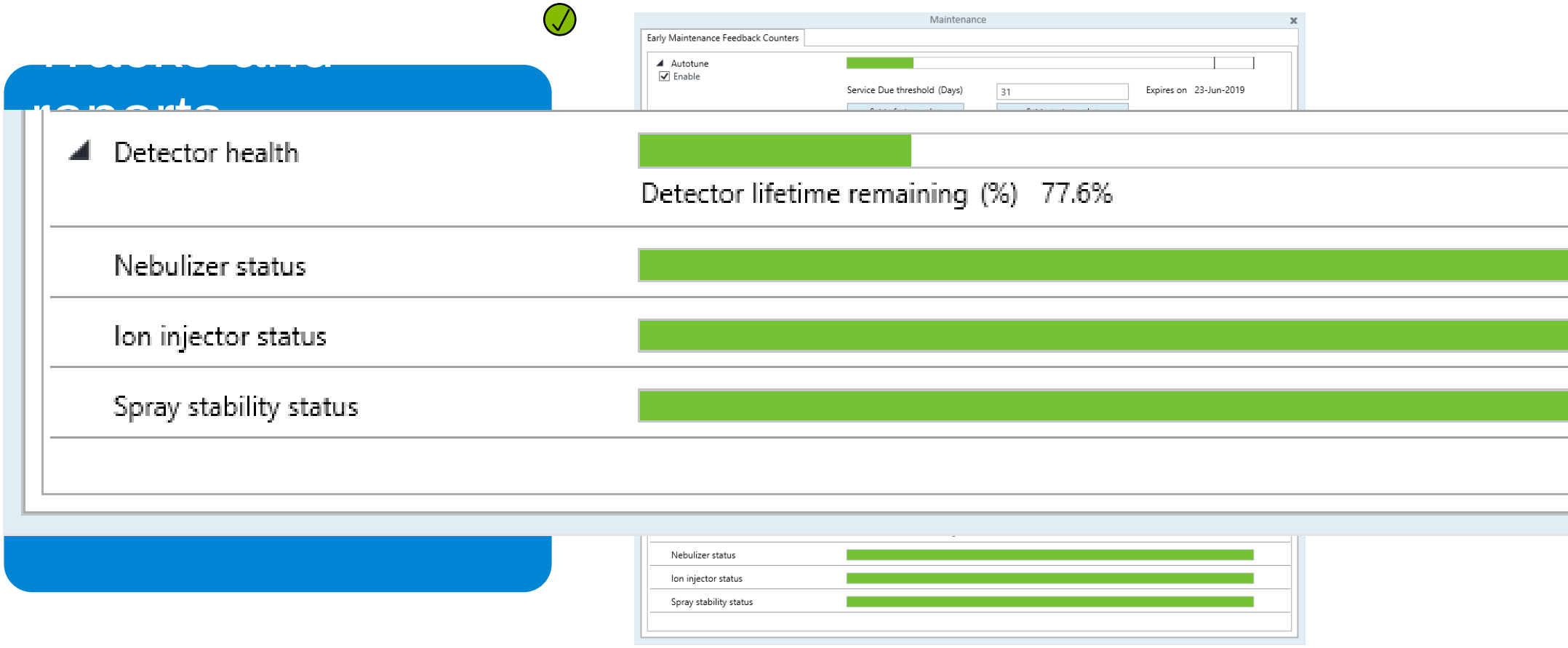
Instrument Health Tracking

Early Maintenance Feedback (EMF)

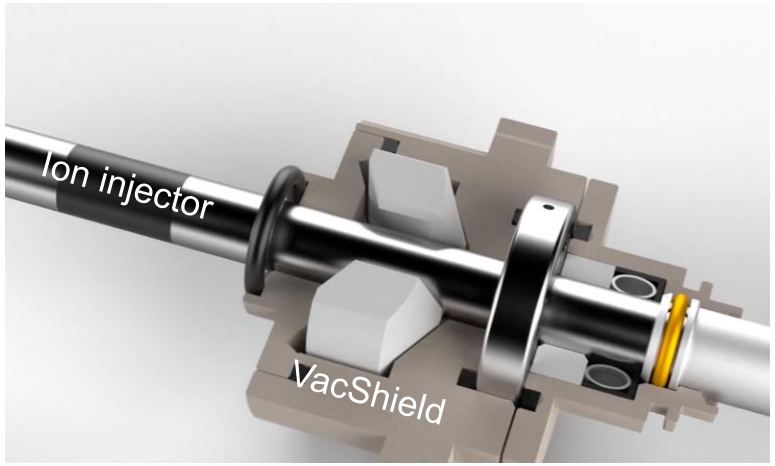


Simple, Rapid, Routine Maintenance with VacShield

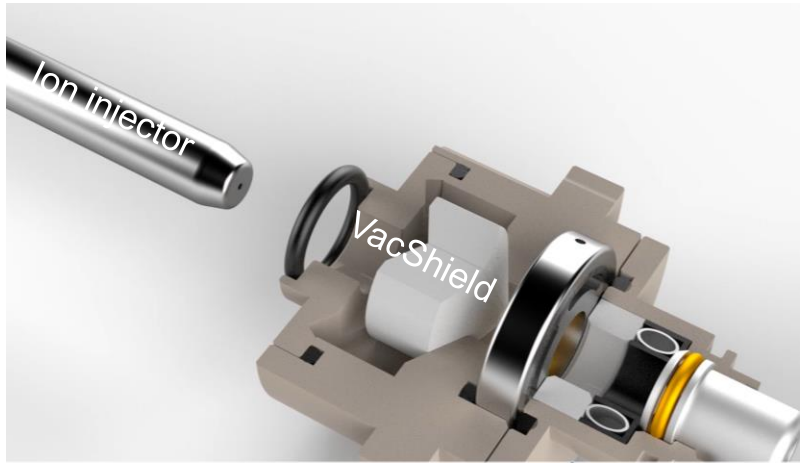
Ion Injector maintenance time reduced to 5 min

Agilent OpenLab

VacShield during operation



VacShield during maintenance



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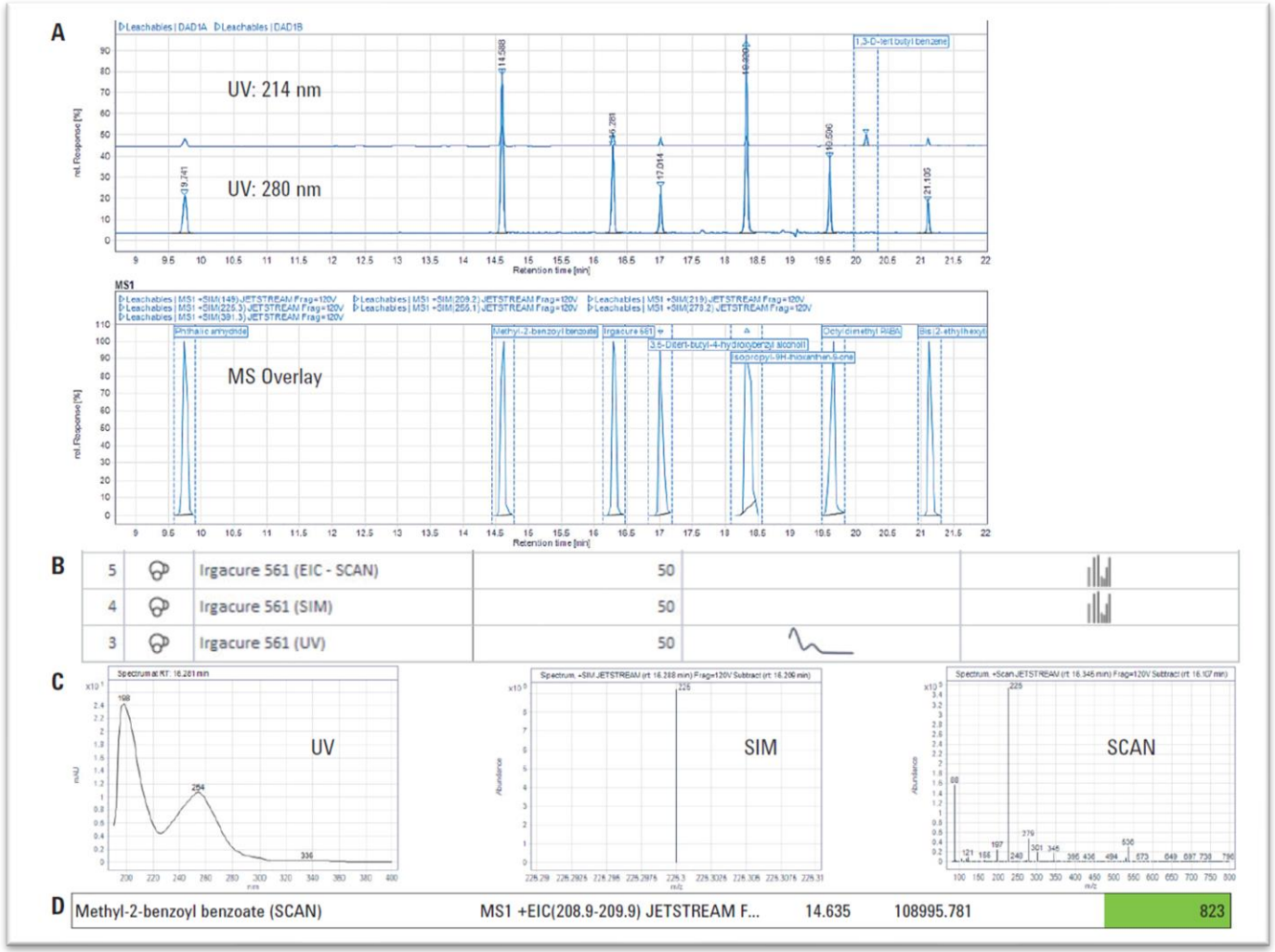
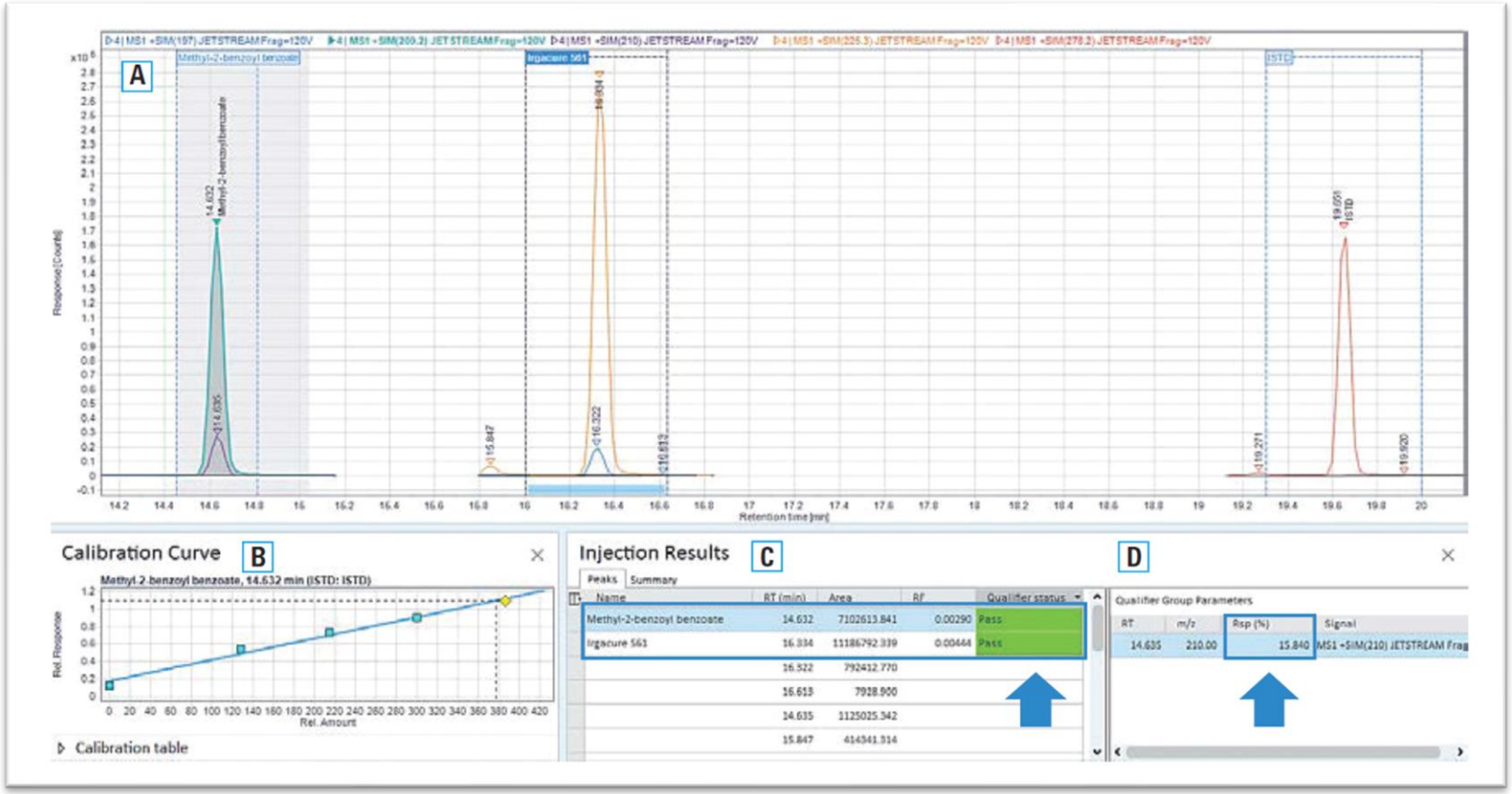
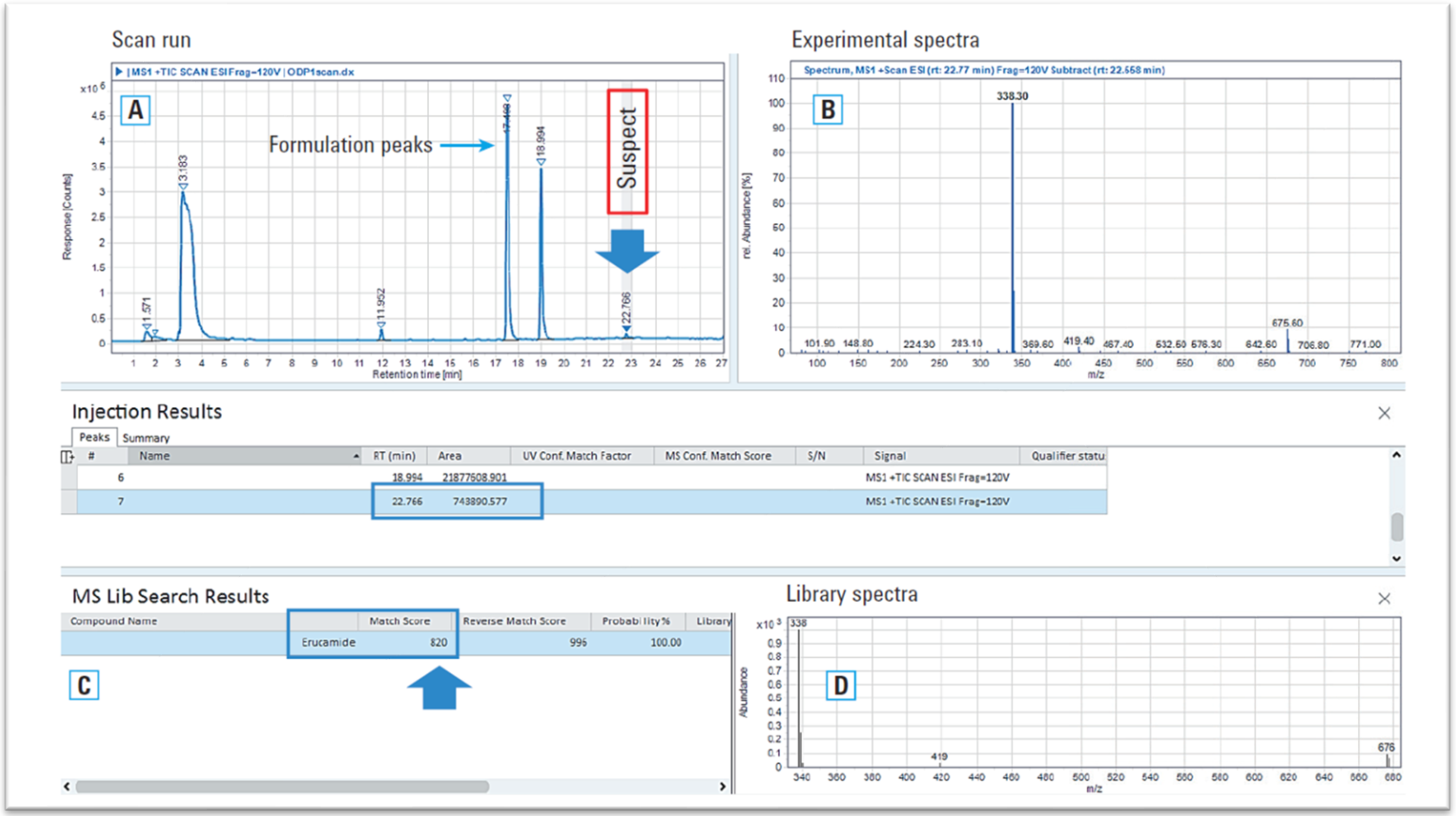


https://www.agilent.com/cs/library/applications/5991-8088EN.pdf



A) Drug formulation analysis showing SIM quantifiers of methyl-2-benzoyl benzoate. B) Calibration curve of the standard. C) Results of the analysis along with status of *Pass* for qualifier status. D) The qualifier response percentage achieved.



A suspect peak from the DP sample detected (A) and its mass spectra extracted (B) and library matched to erucamide (C and D).

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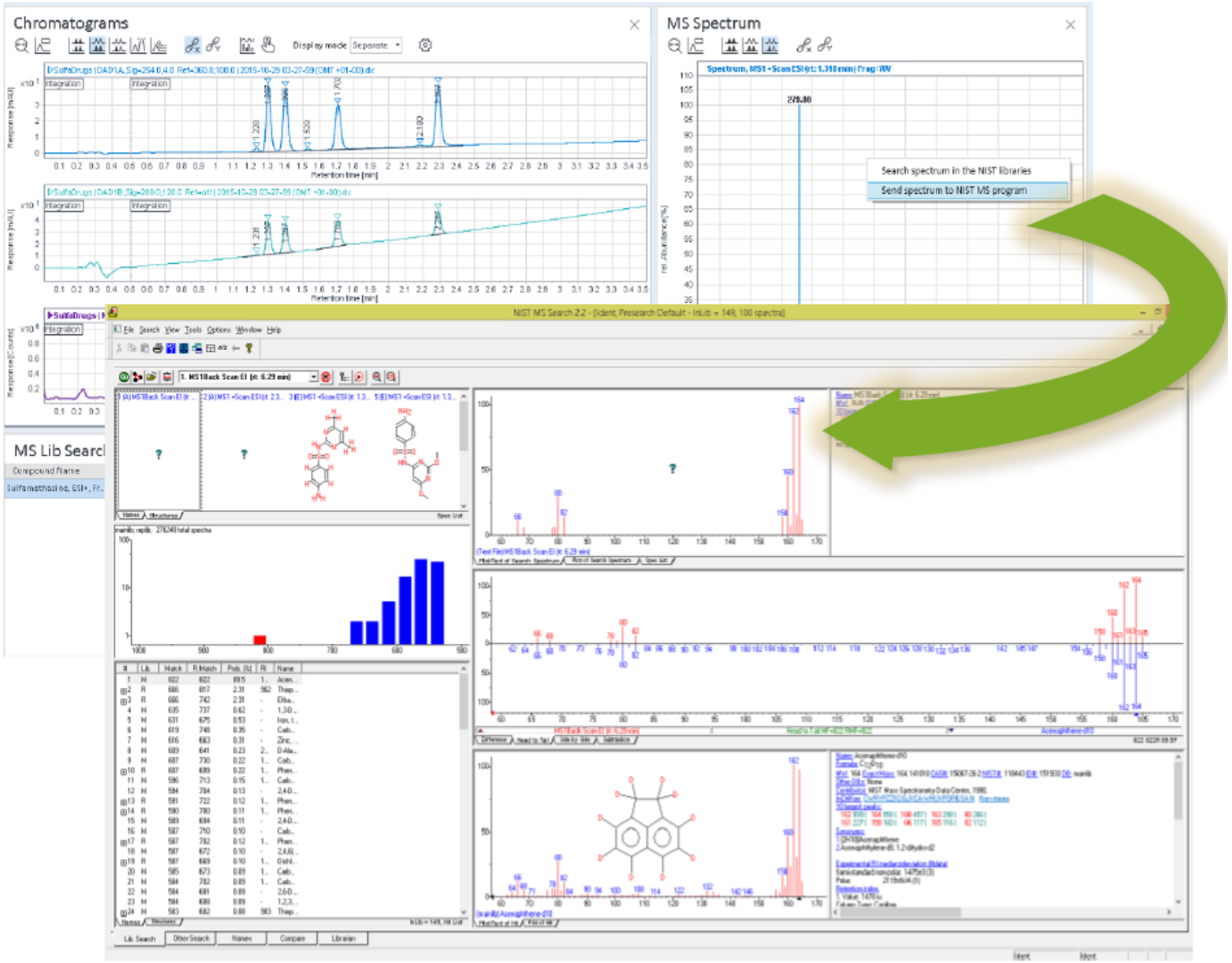

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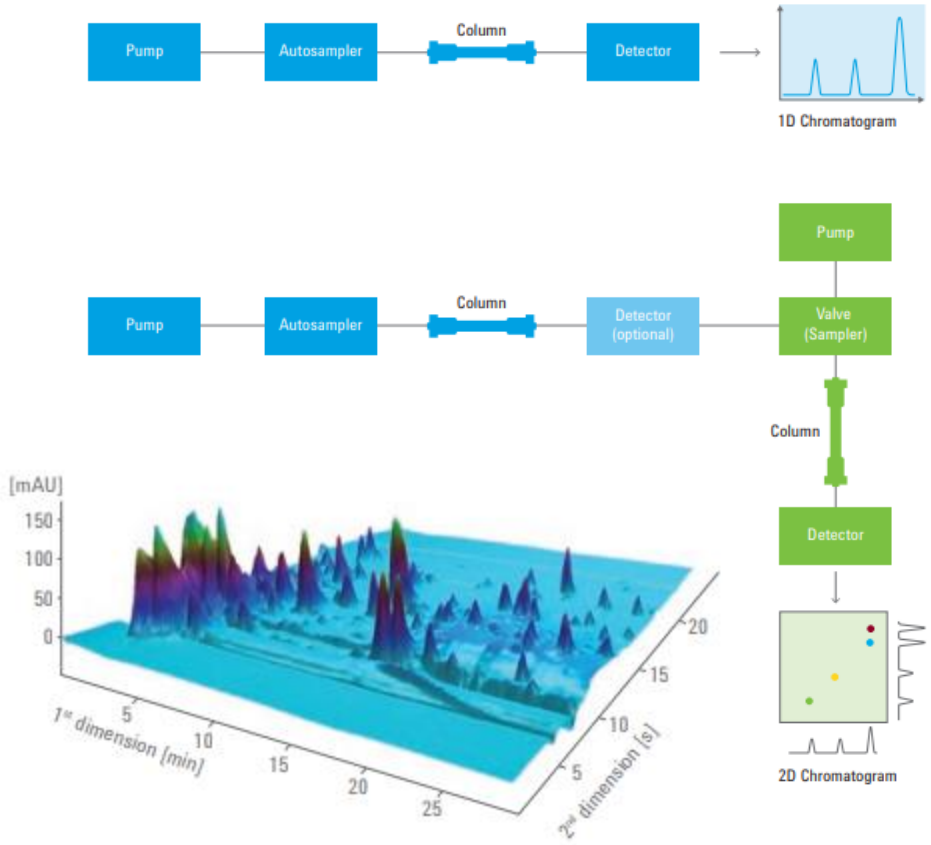
https://blog.agilent.com/2017/08/17/agilent-and-the-solar-eclipse/?from=

2D control for OL CDS in 2021

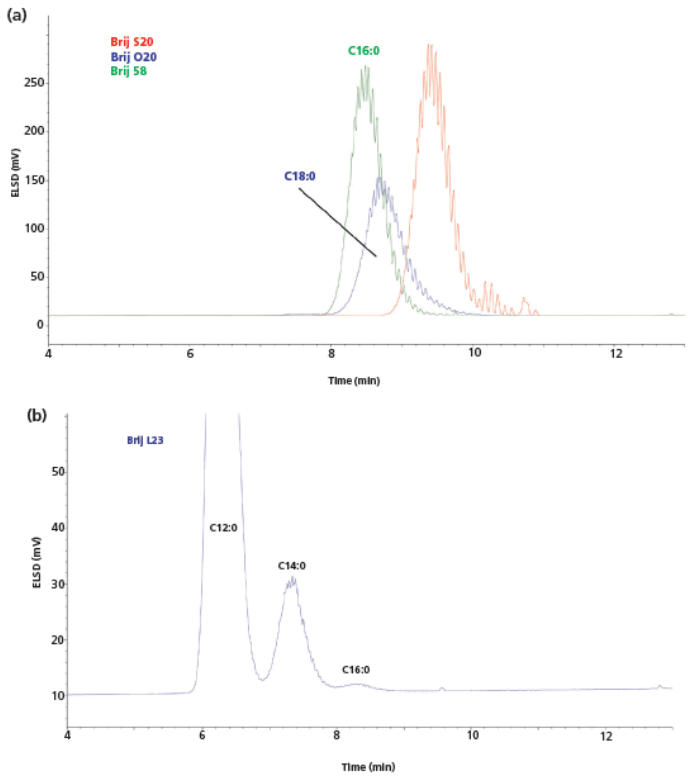
Profiling Nonionic Surfactants Applied in Pharmaceutical Formulations by Using Comprehensive Two-Dimensional LC with ELSD and MS Detection

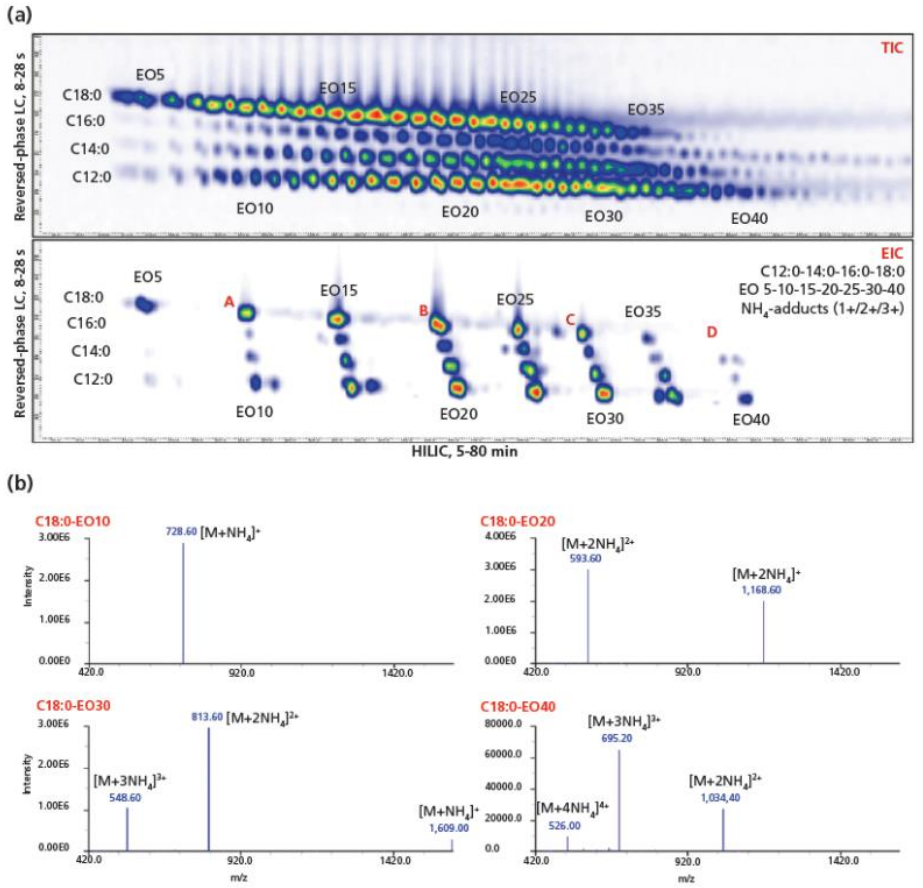
The 2D-LC instrument used for this study was an Agilent 1290 Infinity 2D-LC Solution system. The system comprised the following modules: two binary pumps, a high-performance autosampler, two thermostated column compartments, an external valve drive with a two-position, four-port duo valve equipped with two 20-µL loops for 2D-LC, and an evaporative light scattering detector (Agilent Technologies). For **LC–MS analysis a G6130B single-quadrupole LC–MS system with an electrospray ionization (ESI) source was used (Agilent Technologies).** First- and second-dimension columns were a 100 mm × 2.1 mm, 1.8-µm Zorbax 300 HILIC RRHD column and a 50 mm × 2.1 mm, 1.8-µm Zorbax Eclipse Plus C18 RRHD column (Agilent Technologies), respectively. The second-dimension column effluent was split between ELSD and MS using a zero-dead volume T-piece and two 340 mm × 0.075 mm stainless steel capillaries. For the one-dimensional reversed-phase screening runs a 150 mm × 2.1 mm, 1.8-µm Zorbax Eclipse Plus C18 RRHD column (Agilent Technologies) was used. The method details are summarized in Table II. Instrument control and data analysis were carried out with Agilent OpenLAB chromatography data system (CDS) ChemStation, revision C.01.07 with 2D-LC add-on software (Agilent Technologies) and GC Image LC×LC Edition Software for 2D-LC data analysis (GC Image, LLC), respectively.



Koen Sandra , Pat Sandra , Gerd Vanhoenacker , Mieke Steenbeke

LCGC North America, LCGC North America-06-01-2018, Volume 36, Issue 6
Page Number: 385–393





Koen Sandra , Pat Sandra , Gerd Vanhoenacker , Mieke Stoenbeke

LCGC North America, LCGC North America-06-01-2018, Volume 36, Issue 6
Page Number: 389–393
DE44222.7462037037

Questions

Resources — Primers

5990-7595EN
The LC Handbook
Guide to LC Columns and Method Development

5991-2359EN
Two Dimensional Liquid Chromatography

5990-3777EN
High Performance Capillary Electrophoresis

5991-5509EN
Supercritical Fluid Chromatography

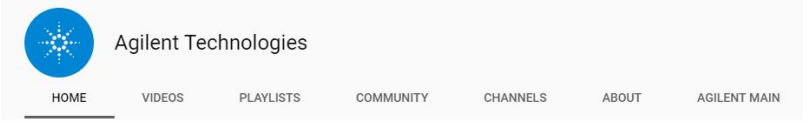
5989-6639EN
Principles in Preparative HPLC

5991-3326EN
Sample Preparation Fundamentals for Chromatography

5980-1397EN
Fundamentals of UV-visible Spectroscopy

Resources for Support

- Collection of LC resources: https://community.agilent.com/docs/DOC-1852-lc-insights-to-go#jive_content_id_LC_Troubleshooting
- LC Troubleshooting Poster: https://www.agilent.com/en/promotions/lc-troubleshooting
- Agilent support resources: https://community.agilent.com/community/resources
- Agilent University: http://www.agilent.com/crosslab/university
- Agilent resource center: http://www.agilent.com/chem/agilentresources
- InfinityLab Supplies Catalog (5991-8031EN)
- Your local FSE and Specialists
- Youtube – Agilent Channel



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great.

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