Liquid Chromatography-Ion Trap-Mass Spectrometer
(LC-Ion Trap-MS/MS)

BRAND : Bruker Daltanic // Agilent Technology
MODEL : Esquire 3000 plus // Agilent 1100
LOCATION : K653 Room, 6th Floor, Chaloemprakiet Building, Phyathai Campus
CUSTODIAN : PRADUP MESAWAT

Agilent 1100

Esquire 3000 plus

SYSTEMS
LC: Agilent 1100
G1312A Binary Gradient Pump
G1379A Micro Vacuum Degasser
G1316A Thermostatted Column Compartment
G1313A Standard Autosampler
G1315B DAD (UV-Visible)
Mass: Esquire 3000 plus
Mass Spectrometer

Description and Specification:

G1379A Micro Vacuum Degasser

Description	Specification
Maximum flow rate	5 mL/min per channel
Number of Channels	4 channel
Internal volume	1 mL per channel
pH range	1 – 14
Material in contract with solvent	PTFE, FEP, PEEK

G1312A Binary Gradient Pump

Description	Specification
Hydraulic system	Two dual-pistons in series, with proprietary servo controlled variable stoke drive, floating pistons and active inlet valve
Flow range	0.001 to 5.0 mL/min, in 0.001 mL/min increments
Pressure	Operating range 0-400 bar (0-40MPa or 0-5880 psi)
Gradient formation	High pressure binary mixing. Delay volume 180-480 µl (600-900 µl with mixer), dependent on back pressure
Compensation precision	< 0.2% SD, at 0.1 and 1.0 mL/min
Flow precision	< 0.3% RSD (Typically <0.15% RSD)
Compressibility compensation	user-selectable, based on mobile phase compressibility
pH range	1.0 – 12.5 recommended

G1316A Thermostatted Column Compartment

Description	Specification
Temperature range	10 degree below ambient to 80 °C
Temperature stability	± 0.15 °C
Temperature accuracy	± 0.8 °C (0.5 °C with Calibration)
Column capacity	3 units with 30 cm length
Heat up/cool down time	5 minutes from ambient temperature to 40 °C, 10 minutes from 40 to 20 °C
Internal volume	3 and 6 micro liter for left and right heat exchanger

G1313A Standard Autosampler

Description	Specification
Sample capacity	2mL x 100 vials in 1 tray, 40 x 2mL vial in ½ tray, 15 x 6 vials in ½ tray
Injection volume	0.1 – 100 µl injection range
Precision	Typically < 0.15%RSD from 5 – 100 µl, typically <1% RSD form 1 – 5 µl
Carry over	Typically <0.1% with out automated needle wash, <0.05% with automated needle wash
Minimum sample volume	1 µl can be sampled from 5 µl in 100 µl micro vial or 10 µl in 300 µl micro vial
Sample viscosity range	0.2 – 50 cp
Recommended pH range	1.0 – 9.5
Injection per vial	1 – 99

G1315B Diode Array Detector (DAD) (UV-Visible)

Description	Specification
Detection type	1024-element photodiode array
Light source	Deuterium and tungsten lamps
Wavelength range	190 – 950 nm
Short term noise (ASTM)	± 1e10^{-5} Au @ 254 and 750 nm
Drift	2x10^{-3} AU/hr @ 254 nm
Linearity	> 2 AU (upper limit)
Wavelength accuracy	± 1 nm, self-calibration with deuterium lines verification with Holmium oxide filter
Wavelength bunching	programmable 2 – 400 nm (in steps of 1nm)
Band width	Programmable 1, 2, 4, 8, 16 nm
Diode width	< 1 nm
Flow cell	Standard flow cell 13 micro liter volume, 10 mm cell path length and 120 bar (1760 psi) pressure maximum.
Performance specifications	Baseline noise: ± 1 × 10^{-5} AU, at 254 nm, Ret. precision: < 0.3 % RSD, Inj. vol. precision: Typically < 0.5 % from 5 – 100 µl
Maintenance and system test	Accessibility to all maintenance parts from front Maintenance instructions through multimedia CD-ROM, Time for full system test (OQ/PV) < 4 hours
Space and delay volume	System delay volume (typical): < 250 µl, Required bench space < 36 cm
System control	Through local computer software, LAN or local handheld control module
GLP features	Early maintenance feedback – EMF (lamp burn time, usage, number of injections with limits and feedback)

Mass Spectrometer

Description	Specification
Ion source	Electrospray Ionization (ESI, API – ESI) Atmospheric Chemical Ionization (APCI)
Ion Transport Region	Capillary, Skimmer, two Octapoles, two lenses
Mass Analyzer	Ion Trap
Detector	Conversion dynode, Electron Multiplier
Scan Mode **Ultrascan** **Standrad – Enhanced** **Standard – Maximun** **Extended**	 Range 50 – 3000 m/z, speed 26000 m/z per second Range 50 – 3000 m/z, speed 8100 m/z per second Range 50 – 3000 m/z, speed 800 m/z per second Range 200 – 6000 m/z, speed 27000 m/z per second
Tandem Mass Spectrometry	Low Energy Collision-Induced Dissociation Auto MS(n), Manual MS(n) and MRM (MS2 –MS3)
For more information please contact the custodian.	

Ion source

ESI

APCI