



Organic and Inorganic Chemistry – speciality tests

Instrument	Instrument method/compound	List of tested standards
GC-ECD-FID	Green House Gases	CH ₄ , N ₂ O, CO ₂ , SF ₆
GC-TCD-FID	Others gases	H ₂ , N ₂ , O ₂ , H ₂ S
GC-FID -Liq	Alcohols	Methanol, n-butanol, pentanol, isoamyl alcohol, 2-methyl-1-pentanol, 2-heptanol, 2-octanol, ...
	Ketones	Methylethyl ketone, 2,3-butanedione, 4-methyl-2-pentanol, 2-methyl-3-hexanone, 2-heptanone, ...
	Volatile free acids	Acetic acid, butyric, pentanoic, hexanoic, heptanoic, octanoic, nonanoic
GC-FID/TCD -Gas	Ethylene	Acetylene/ethylene
GCMS (Liquid, headspace, SPME)	Sample screening/ open profiling	Volatile and semivolatile compounds
	Fatty acids (C:6 - C:24)	37 component FAME mix
	Bacterial fatty acid analysis	24 component BAME mix
	Wine analysis	Based on client requests
	Targeted quantitative	Based on client requests
IC	Cations - common	Li, Na, K, NH ₄ , Ca, Mg, Fe, Zn
	Cations - alkaline earth metals	Co, Zn, Sr, Ba, Ca, Mg, Fe, Ni, Cu
	Cations - speciation	Co(I)/(II), Fe(II)/(III), Cr(III)/(VI), Cu(I)/(II)
	Anions - common	NO ₃ , NO ₂ , SO ₄ , PO ₄ , F, Cl, Br
	Anions - halides	F, Cl, Br, I
	Anion - speciation	NO ₂ /NO ₃ , SO ₂ /SO ₄ , Br/BrO ₄
UHPLC-PDA-ELSD-FLR-RI	Sugars (ELSD or RI)	Xylose, fructose, glucose, sucrose, maltose, maltotriose, arabinose, mannose, galactose, lactose
	Sugar aditols (pmp deri; PDA)	Ramnose, fucose, arabinose, xylose, mannose, galactose, ribose, deoxyribose, glucose, glucuronic acid...
	Water soluble vitamins (PDA)	Bs, C
	Fat soluble vitamins (PDA)	A, D2, D3, K2 (MK4), K2 (MK7), E
	Organic acids (PDA)	Oxalic, citric, tartaric, malic, malonic, succinic, formic, acetic, fumaric, butyric
	Salicylic acids (PDA)	Gallic, gentisic, chlorogenic, caffeic, vanillic, homovanillic, syringic, p-coumaric, ferulic, ...
	Phenolic acids (PDA)	Catechin, mangiferin, rutin, myricetin, quercetin, kaempferol, apigenin, naringenin, chrysin, flavone, pinocembrin
	Flavonoids (PDA)	Catechin, mangiferin, rutin, myricetin, quercetin, kaempferol, apigenin, naringenin, chrysin, flavone, pinocembrin
	17 amino acids (FMOC deri; FLR)	20 amino acids (minus tryptophan, histidine, lysine, cysteine) plus ornithine
	Auxins (PDA)	TRP, histidine, tyrosine, IAA, HPA, IAM, NAA
LC-MS/MS	Curcumin (PDA)	Curcumin I, II, III
	Pigments (PDA)	Fucosanthin, astaxanthin, zeaxanthin, lutein, violaxanthin, β-carotene, α-carotene, chlorophyll A and B
	Sterols (PDA)	Ergosterol and cholesterol
	Xanthines (PDA)	Caffeine, theobromine, theophylline
	Sugars analysis by MRM	Xylose, fructose, glucose, sucrose, maltose, maltotriose, arabinose, mannose, galactose, lactose, raffinose, stachyose
	Sugar aditols by MRM	Ramnose, fucose, arabinose, xylose, mannose, galactose, ribose, deoxyribose, glucose, galacturonic acid, glucuronic acid
	Water soluble vitamins by MRM	B1, B2, B3, B5, B6, B7, B9, B12, C
	Fat soluble vitamins by MRM	A, D2, D3, K2 (MK4), K2 (MK7), E
	Organic acids by MRM	Oxalic, citric, tartaric, malic, malonic, succinic, formic, acetic, fumaric, butyric
	Salicylic acids by MRM	Salicylic acids
	Phenolic acids by MRM	MRM method can detect and quantify > 14 phenolic acid such as gallic, gentisic, chlorogenic, caffeic, ...
	Flavonoids & polyphenols by MRM	MRM method can detect and quantify > 60 compounds such as The catechin, mangiferin, rutin, myricetin, quercetin, ...
	17 common amino acids by MRM	20 amino acids (minus tryptophan, histidine, lysine, cysteine) plus ornithine
	Auxins by MRM	TRP, histidine, tyrosine, IAA, HPA, IAM, NAA
	Curcumin by MRM	Curcumin I, II, III
	Pigments by SIM	Fucosanthin, astaxanthin, zeaxanthin, lutein, violaxanthin, β-carotene, α-carotene, chlorophyll A and B
	Sterols by MRM	Ergosterol and cholesterol
	Xanthines by MRM	Caffeine, theobromine, theophylline
	Resveratrol by MRM	Resveratrol
	Glucoraphanin by MRM	Glucoraphanin
	Sulforaphane & sulforaphene	
	pesticides by MRM	Our current MRM method can detect and quantify more than 250 pesticides and herbicides
	Drugs by MRM	
	Saponins by MRM or SIM	
	allin and alicin by MRM or SIM	
	Anthocyanins and it derivatives	More than 25 anthocyanins can be identified and quantified
	Myrotocoxins	

Contact: agfs.scientific.services@uq.edu.au