

The background ion master list includes:

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Table 1: ESI+ common background ions

m/z	Ion	Compound	Source
33	(M+H) ⁺	methanol	
42	(M+H) ⁺	acetonitrile	
59	(M+NH ₄) ⁺	acetonitrile	
64	(M+Na) ⁺	acetonitrile	
65	(2M+H) ⁺	methanol	
74	(M+H) ⁺	dimethylformamide	
79	(M+H) ⁺	DMSO	
83	(2M+H) ⁺	acetonitrile	
85	(M+H) ⁺	d6-DMSO	
88	(M+formic acid+H) ⁺	acetonitrile	
101	(M+Na) ⁺	DMSO	
102	(M+H) ⁺	triethylamine	
104/106	(M+Cu) ⁺	acetonitrile	
105	(2M+Na) ⁺	acetonitrile	
115	(M+dimethyl formamide+H) ⁺	acetonitrile	
120	(M+Na+CH ₃ CN) ⁺	DMSO	
122	(M+H) ⁺	tris (tris(hydroxymethyl)aminomethane)	
123	(M+H) ⁺	diisopropylethylamine	
130	(M+H) ⁺	diisopropylethylamine	
137	(M+CH ₃ CN+NH ₄) ⁺	DMSO	
144	(M+H) ⁺	tripropylamine	
145/147	(2M+Cu) ⁺	acetonitrile	
146	(3M+Na) ⁺	acetonitrile	
149	(M+H) ⁺	phthalic anhydride	
150	(M+H) ⁺	phenyldiethylamine	
153	(M+H) ⁺	1,8-diazabicyclo[5.4.0]undec-7-ene (DBU)	
157	(2M+H) ⁺	DMSO	
159	(M+Na) ⁺	sodium trifluoroacetate	
163		dimethyl phthalate	
167		dioctyl phthalate	
169	(2M+H) ⁺	d6-DMSO	
171	(M+Na) ⁺	phthalic anhydride	
179	(2M+Na) ⁺	DMSO	
186	(M+H) ⁺	tributylamine	
195	(M+H) ⁺	dimethyl phthalate	
214	(M+H) ⁺	n-butylbenzenesulfonamide	plasticizer

Table 1: ESI+ common background ions (continued)

m/z	Ion	Compound	Source
225	(M+H) ⁺	dicyclohexylurea	
231	(M+NH ₄) ⁺	n-butyl benzenesulfonamide	plasticizer
236	(M+Na) ⁺	n-butyl benzenesulfonamide	plasticizer
239/241	[(M.HCl) ₂ -Cl] ⁺	triethylamine	
242	M ⁺	tetrabutylammonium cation (C ₄ H ₉) ₄ N ⁺	
243	M ⁺	trityl cation	
257	(3M+H) ⁺	DMSO	
267	(M+H) ⁺	tributyl phosphate	
273	M ⁺	monomethoxytrityl cation	
279	(M+H) ⁺	triphenylphosphine oxide	
279	(M+H) ⁺	dibutyl phthalate	plasticizer
282	(M+H) ⁺	oleamide	slip agent in polyethylene films
284	(M+H) ⁺	stearamide	slip agent in polyethylene films
288	(M+H) ⁺	n,n-bis(2-hydroxyethyl)dodecanamide)	anti-static agent
301	(M+Na) ⁺	dibutyl phthalate	plasticizer
304	(M+Na) ⁺	oleamide	slip agent in polyethylene films
317	(M+K) ⁺	dibutyl phthalate	plasticizer
336	(M+H) ⁺	tributyl tin formate	
338	(M+H) ⁺	erucamide	slip agent in polyethylene films
355		decamethylcyclopentasiloxane	siloxane from silica column, personal care products
360	(M+Na) ⁺	erucamide	slip agent in polyethylene films
371	(M+H) ⁺	decamethylcyclopentasiloxane	
388		decamethylcyclopentasiloxane	
391	(M+H) ⁺	diisooctyl phthalate	plasticizer
413	(M+Na) ⁺	diisooctyl phthalate	plasticizer
425	(M+Na) ⁺	unidentified contaminant	
429	(M+K) ⁺	diisooctyl phthalate	plasticizer, often seen w/ silica capillary NanoSprayer
445	(M+H) ⁺	dodecamethylcyclohexasiloxane	seen w/ silica capillary NanoSprayer
449	(2M+H) ⁺	dicyclohexylurea	
454	(M+Na+CH ₃ CN) ⁺	diisooctyl phthalate	plasticizer, also observed w/ high conc. of formic acid
462		dodecamethylcyclohexasiloxane	
503			seen w/ silica capillary NanoSprayer
519	(M+H) ⁺	tetradecamethylcycloheptasiloxane	seen w/ silica capillary NanoSprayer

Table 1: ESI+ common background ions (continued)

m/z	Ion	Compound	Source
522			derived from rubber tip from disposable syringe plunger
531	(M+H) ⁺		seen w/ Nunc polypropylene tubes
536			seen w/ silica capillary NanoSprayer
538	(acetate) _n +(Fe) _n ⁺		observed w/ high conc. of acetic acid
550			derived from rubber tip from disposable syringe plunger
553	(M+Na) ⁺		seen w/ Nunc polypropylene tubes
555	(acetate) _n +(Fe) _n ⁺		observed w/ high conc. of acetic acid
569	(M+K) ⁺		seen w/ Nunc polypropylene tubes
587	(M+H) ⁺		seen w/ Vanguard polypropylene tubes
593	(M+H) ⁺	hexadecamethylcyclooctasiloxane	
609	(M+Na) ⁺		seen w/ Vanguard polypropylene tubes
610			seen w/ silica capillary NanoSprayer
625	(M+K) ⁺		seen w/ Vanguard polypropylene tubes
638			seen w/ silica capillary NanoSprayer
667	(M+H) ⁺	octadecamethylcyclononasiloxane	
675			seen w/ new PEEK tubing
679	(M+H) ⁺		from purified water and solvent filters
684			seen w/ silica capillary NanoSprayer
696	(M+NH ₄) ⁺		from purified water and solvent filters
701	(M+Na) ⁺		from purified water and solvent filters
741	(M+H) ⁺	eicosamethylcyclodecasiloxane	
786	(M+Ti) ⁺	titanium adduct	
798	(2M+NH ₄) ⁺	diisooctyl phthalate	plasticizer
803	(2M+Na) ⁺	diisooctyl phthalate	plasticizer

Table 2: ESI- common background ions

m/z	Ion	Compound
26	CN ⁻	acetonitrile
45	HCOO ⁻	formate
59	CH ₃ COO ⁻	acetate
69	CF ₃ ⁻	sodium trifluoroacetate
79	PO ₃ ⁻	phosphate
80	SO ₃ ⁻	sulfate
95	CH ₃ SO ₃ ⁻	methanesulfonate
97	HSO ₄ ⁻	
97	H ₂ PO ₄ ⁻	
113	CF ₃ COO ⁻	trifluoroacetic acid
127	CF ₃ COOH.CF ₃ COO ⁻	trifluoroacetic acid
227	CF ₃ COONa.CF ₃ COO ⁻	sodium trifluoroacetate
249	((CF ₃ COOH) ₂ + Na - 2H) ⁻	sodium trifluoroacetate

Table 3: ESI+ common clusters

m/z	Compound
18	water
32	methanol
41	acetonitrile
44	polyethylene glycol (PEG), HO-(CH ₂ CH ₂ O) _n -H ⁺
50	perfluoro, CF ₂
53	NH ₄ Cl
58	polypropylene glycol (PPG)
58	NaCl
63	NH ₄ Cl salts
68	sodium formate salts
72	replacement of OH by OSi(CH ₃) ₃
74	KCl
74	Si(CH ₃) ₂ O (from silicone rubber polymer)
77	NH ₄ Ac salts
78	DMSO
82	sodium acetate
136	sodium trifluoroacetate
162	polysaccharides

Table 4: ESI+ common adducts

m/z	Compound
(M+1)	(M+H) ⁺
(M+18)	(M+NH ₄) ⁺
(M+23)	(M+Na) ⁺
(M+39)	(M+K) ⁺
(M+33)	(M+CH ₃ OH+H) ⁺
(M+42)	(M+ACN+H) ⁺
(M+64)	(M+ACN+Na) ⁺
(M+79)	(M+DMSO+H) ⁺
(M+83)	(M+2ACN+H) ⁺

Table 5: ESI+ ion series

m/z	Compound
79, 157, 235	(nDMSO+H) ⁺
101, 179, 257	(nDMSO+Na) ⁺
231, 522, 550	unknown
267, 289, 330	tributyl phosphate
355, 429, 503, 577	cyclosiloxane