

Supplementary Table 1 Identification of anthocyanins in blueberry extracts by LC-MS

Chemical Name	Formula	Retention time	Theoretical m/z	Experimental m/z	Chemotaxonomic
Cyanidin 3-O-(2-xylosyl-6-(6'-caffeoyl-glucosyl)-galactoside)	C41H45O23	358.6	905.2454	905.235152	cyanidin
Cyanidin 3-(6"-p-coumarylglucoside)-5-4''',6'''-dimalonylglucoside)	C42H41O24	366.1	929.2151	929.1987686	cyanidin
Malvidin 3-glucoside-5-(2"-sulfatoglucoside)	C29H35O20S	369.1	735.148	735.144233	Malvidin
Cyanin chloride	C27H31O16	393.2	611.1563	611.1612026	cyanidin
Cyanidin 3-(disinapoylsophoroside) 5-glucoside	C55H61O29	394.7	1185.323	1185.329836	cyanidin
Cyanidin 3- (6-malylglucoside)	C25H25O15	415.2	565.1188	565.11934	cyanidin
Cyanidin 3-O- [beta-D-glucopyranoside] -7,3'-di-O- [6-O-(sinapyl) -beta-D-glucopyranoside]	C55H61O29	445.0	1185.3074	1185.329836	cyanidin
Myrtillin	C21H21O12	449.2	465.1022	465.1032966	delphinidin
Cyanidin 3,3'-di-glucoside-7- (6"-caffeoylglucoside)	C42H47O24	455.1	935.2608	935.2457162	cyanidin
Cyanidin 3-diglucoside 5-glucoside	C33H41O21	460.8	773.2065	773.2140236	cyanidin
Cyanidin 3- (2-glucosyl-6-caffeoylglucoside)	C36H37O19	460.8	773.1913	773.1928952	cyanidin
3,5-Bis(beta-D-glucopyranosyloxy)-7-hydroxy-2-(4-hydroxy-3-methoxyphenyl)-1-benzopyrylium chloride	C28H33O16	462.3	625.1773	625.1768518	Peonidin
Cyanidin 3-O-sophoroside	C27H31O16	463.8	611.1639	611.1612026	cyanidin
Cyanidin 3-arabinoside-5-glucoside	C26H29O15	468.2	581.1435	581.1506384	cyanidin
Idaein	C21H21O11	480.8	449.1078	449.1083816	cyanidin
Cyanidin 3- (2G-galloylrutinoside)	C34H35O19	501.2	747.1674	747.177246	cyanidin
Cyanidin 3-O-rutinoside 5-O-beta-D-glucoside	C33H41O20	502.6	757.2155	757.2191086	cyanidin
Keracyanin	C27H31O15	511.6	595.1646	595.1662876	cyanidin
Cyanidin 3-O-(beta-D-xylosyl-(1->2)-beta-D-galactoside)	C26H29O15	513.1	581.1448	581.1506384	cyanidin
Petunidin 3-galactoside	C22H23O12	514.6	479.1192	479.1189458	Petunidin
Peonidin 3-gentiotrioside	C34H43O21	518.7	787.2364	787.2296728	Peonidin
Peonidin 3-(6"-caffeylglucoside)	C31H29O14	522.9	625.1603	625.1557234	peonidin
Pelargonidin 3-glucoside	C21H21O10	527.4	433.1118	433.1134666	Pelargonidin

Petunin	C28H33O17	530.3	641.173	641.1717668	petunidin
Cyanidin 3,5-di-(6-malonylglucoside)	C33H35O22	531.9	783.1632	783.161991	cyanidin
Cyanidin 3-(6''-(Z)-p-coumarylsophoroside)	C36H37O18	531.9	757.2131	757.1979802	cyanidin
5-Carboxypyranocyanidin 3-O-beta-glucopyranoside	C24H21O13	533.3	517.0987	517.0982116	cyanidin
Cyanidin 3-O-(2''-O-galloyl-6''-O-alpha-rhamnopyranosyl-beta-galactopyranoside)	C34H35O19	534.8	747.1772	747.177246	cyanidin
Delphinidin	C15H11O7	537.7	303.0491	303.0504756	Delphinidin
Peonidin 3-galactoside	C22H23O11	546.4	463.1271	463.1240308	Peonidin
Cyanidin 3-O-(2-O-beta-D-glucuronosyl)-beta-D-glucoside	C27H29O17	558.0	625.1297	625.1404684	cyanidin
Oenin	C23H25O12	558.0	493.1396	493.134595	malvidin
Cyanidin 3-(2''-glucuronosylglucoside)	C27H29O17	560.9	625.1776	625.1404684	cyanidin
Peonidin 3-rhamnoside 5-glucoside	C28H33O15	563.8	609.1769	609.1819368	peonidin
Cyanidin-3-O-arabinoside chloride	C20H19O10	565.2	419.0956	419.0978174	cyanidin
Peonidin 3-[2-(xylosyl)galactoside]	C27H31O15	568.2	595.1751	595.1662876	peonidin
Cyanidin 3-(2-galloyl)galactoside)	C28H25O15	578.4	601.1193	601.11934	cyanidin
Cyanidin 3-O-(6-O-malonyl-beta-D-glucoside)	C24H23O14	579.7	535.1081	535.1087758	cyanidin
Peonidin 3-(6''-p-coumaroyl-glucoside) 5-glucoside	C38H41O17	582.7	769.2427	769.2343636	Peonidin
Cyanidin 3-(6-caFFEyl-2'-sinapylsambubioside) -5-(6-malonylglucoside)	C55H57O30	582.7	1197.2727	1197.293452	cyanidin
Malvidin 3-rhamnoside	C23H25O11	588.6	477.1439	477.13968	Malvidin
Delphin	C27H31O17	590.1	627.1531	627.1561176	Delphinidin
Delphinidin 3-caFFEoylglucoside	C30H27O15	597.3	627.1347	627.1349892	delphinidin
Malvidin 3-(malonyl)glucoside	C26H27O15	606.4	579.1338	579.1349892	Malvidin
Cyanidin	C15H11O6	616.8	287.0529	287.0555606	cyanidin
Malvidin 3-(6''-acetyl-galactoside)	C25H27O13	625.5	535.1464	535.1451592	Malvidin
Cyanidin 3-rhamnoside	C21H21O10	627.0	433.1137	433.1134666	cyanidin
Peonidin 3-(6''-malonyl-glucoside)	C25H25O14	627.0	549.1376	549.124425	Peonidin
Malvidin 3-gentiotrioside	C35H45O22	633.1	817.256	817.240237	Malvidin
Delphinidin 3-(6-rhamnosyl)galactoside)	C27H31O16	633.1	611.1633	611.1612026	delphinidin

Cyanidin 3-(6"-acetyl)galactoside	C23H23O12	633.1	491.1201	491.1189458	cyanidin	
Delphinidin 3- (6"-p-coumarylglucoside)	C30H27O14	633.1	611.1466	611.1400742	delphinidin	
Petunidin	C16H13O7	634.6	317.0681	317.0661248	Petunidin	
Malvidin 3-arabinoside	C22H23O11	644.9	463.1196	463.1240308	Malvidin	
Petunidin 3-gentiotrioside	C34H43O22	656.7	803.2336	803.2245878	Petunidin	
Apigeninidin 5- (5-caFFEylarabinoside)	C29H25O11	661.2	549.1225	549.13968	Apigeninidin	
Delphinidin 3-robinobioside-5-glucoside	C33H41O21	662.8	773.2209	773.2140236	Delphinidin	
Pelargonidin chloride	C15H11O5	670.2	271.0581	271.0606456	Pelargonidin	
Malvidin 3-glucoside-4-vinylguaiacol	C32H31O14	671.8	639.172	639.1713726	Malvidin	
3-O-[b-D-Xylopyranosyl-(1->2)-(4-hydroxycinnamoyl)-(->6)-b-D-glucopyranoside](E)-	C35H35O17	673.3	727.184	727.187416	cyanidin	
Cyanidin 2G-(xylosylrutinoside)	C32H39O19	673.3	727.1995	727.2085444	cyanidin	
Peonidin 3-(6"-acetyl-galactoside)	C24H25O12	674.8	505.1348	505.134595	peonidin	
Malvidin chloride	C17H15O7	676.3	331.0798	331.081774	Malvidin	
Cyanidin 3-(4"-malonyl-2"-glucuronosylglucoside)	C30H31O20	685.2	711.1497	711.1408626	cyanidin	
Pelargonidin 3-O-[2-O-(beta-D-xylopyranosyl)-6-O-(methyl-malonyl)-bata-D-galactopyranoside]	C30H33O17	688.3	665.1682	665.1717668	Pelargonidin	
Petunidin-3-O-galactoside	C22H25O12	701.7	481.126	481.134595	petunidin	
Malvin	C29H35O17	704.7	655.1865	655.187416	Malvidin	
Malvidin 3-(6-malonylglucoside) 5-glucoside	C32H37O20	706.2	741.1994	741.1878102	Malvidin	
Delphinidin 3-(6"-malonylsambubioside)	C29H31O19	710.8	683.189	683.1459476	Delphinidin	
Cyanidin 3-(6"-coumaroyl)glucoside	C30H27O13	710.8	595.1469	595.1451592	cyanidin	
Petunidin 3-rutinoside	C28H33O16	710.8	625.168	625.1768518	petunidin	
Petunidin 3-(6"-p-coumaroyl-galactoside)	C31H29O14	710.8	625.1545	625.1557234	petunidin	
pelargonidin-3-O-rutinoside	C27H30O14	738.1	578.1602	578.163548	Pelargonidin	
Petunidin 3-glucoside-5- (6-acetylglucoside)	C30H35O18	741.1	683.1891	683.182331	Petunidin	
Peonidin 3-(6"-p-coumaroyl-galactoside)	C31H29O13	744.1	609.1591	609.1608084	peonidin	
5,7-dihydroxy-2-(4-hydroxy-3,5-dimethoxyphenyl)chromenium-3-yl	6-O-[(2E)-3-(4-	C32H31O14	745.5	639.1684	639.1713726	malvidin

hydroxyphenyl)prop-2-enoyl]-beta-D-glucopyranoside					
Malvidin 3-rhamnoside-5-glucoside	C29H35O16	745.5	639.1875	639.192501	malvidin
Luteolinidin 5,7-diglucoside	C27H31O15	753.1	595.1594	595.1662876	Luteolinidin
Petunidin 3- (6"-acetylglucoside)	C24H25O13	760.6	521.1347	521.12951	petunidin
6-Hydroxypelargonidin 3-glucoside	C21H21O11	769.6	449.1077	449.1083816	Pelargonidin
Apigeninidin 5,7-diglucoside	C27H31O14	788.9	579.1438	579.1713726	Apigeninidin
3-Ferulylpelargonidin 5-glucoside	C31H29O13	796.4	609.166	609.1608084	Pelargonidin
Delphinidin 3'-O-(2"-O-galloyl-6"-O-acetyl-beta-galactopyranoside)	C30H27O17	806.9	659.1242	659.1248192	Delphinidin
Malvidin 3-O-rutinoside-5-O-glucoside	C35H45O21	808.4	801.235	801.245322	Malvidin
5-Methylcyanidin 3-glucoside	C22H23O11	815.8	463.1266	463.1240308	cyanidin
Cyanidin 3-O-(6"-malonyl-arabinoside)	C23H21O13	898.5	505.1248	505.0982116	cyanidin
Cyanidin 3-O-(2-xylosyl-6-(6'-caffeoyl-glucosyl)-galactoside)	C41H45O23	358.6	905.2454	905.235152	cyanidin