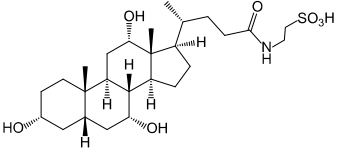
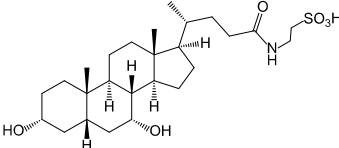
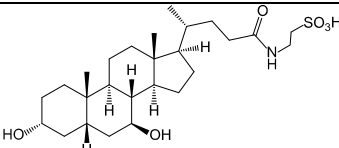
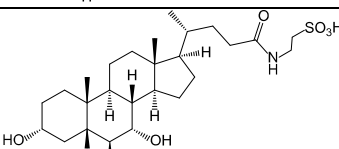
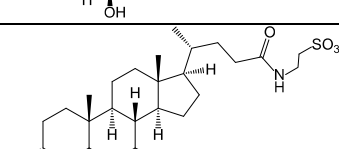
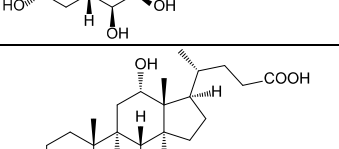
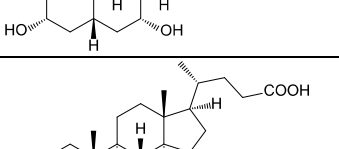
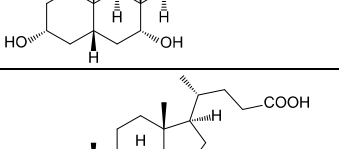
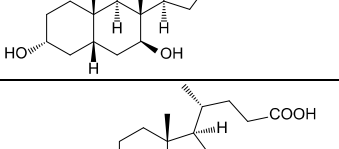
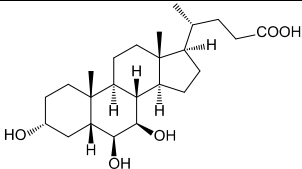
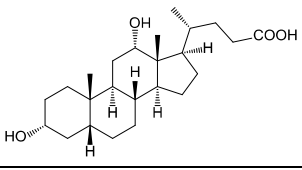
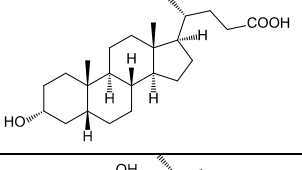
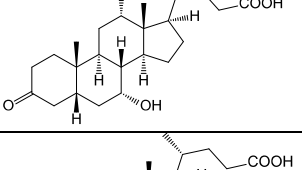
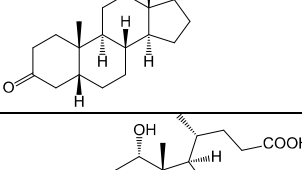
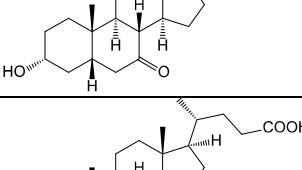
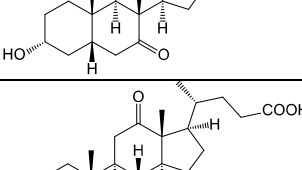
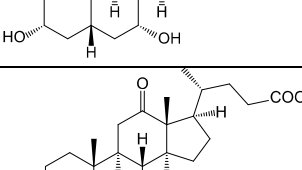
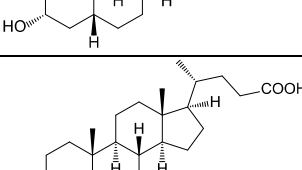
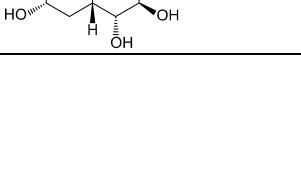





**Supplementary Table 2. A complete list of BA and SCFA analytes along with their chemical structure, LC retention time, and exact mass.**

Name	Chemical structure	Retention time (min)	Monoisotopic mass	Ion
Tauro-cholic acid		5.49	514.28	[M-H] <sup>-</sup>
Tauro-chenodeoxycholic acid		6.37	498.29	[M-H] <sup>-</sup>
Tauro-ursodeoxycholic acid		5.48	498.29	[M-H] <sup>-</sup>
Tauro-α-muricholic acid		4.44	514.28	[M-H] <sup>-</sup>
Tauro-β-muricholic acid		4.61	514.28	[M-H] <sup>-</sup>
Cholic acid		7.13	453.29	[M+HCOO] <sup>-</sup>
Chenodeoxycholic acid		8.03	437.29	[M+HCOO] <sup>-</sup>
Ursodeoxycholic acid		7.44	437.29	[M+HCOO] <sup>-</sup>
α-Muricholic acid		6.54	453.29	[M+HCOO] <sup>-</sup>

$\beta$ -Muricholic acid		6.83	453.29	[M+HCOO] <sup>-</sup>
Deoxycholic acid		8.09	437.29	[M+HCOO] <sup>-</sup>
Lithocholic acid		8.92	421.28	[M+HCOO] <sup>-</sup>
3-oxo-cholic acid		7.08	451.27	[M+HCOO] <sup>-</sup>
3-oxo-lithocholic acid		8.97	419.27	[M+HCOO] <sup>-</sup>
7-oxo-cholic acid		6.55	451.27	[M+HCOO] <sup>-</sup>
7-oxo-chenodeoxycholic acid		7.73	435.27	[M+HCOO] <sup>-</sup>
12-oxo-cholic acid		6.90	451.27	[M+HCOO] <sup>-</sup>
12-oxo-deoxycholic acid		7.79	435.27	[M+HCOO] <sup>-</sup>
$\omega$ -Muricholic acid		6.42	453.29	[M+HCOO] <sup>-</sup>

Acetate		1.6	59.01	[M-H]-
Propionate		1.1	73.03	[M-H]-
Butyrate		0.9	87.04	[M-H]-