

Supplementary Table 3. Tentative identification of different lipophilic compound expression in both WT and mutants.

a) Lipophilic compounds' differences between WT and EMS30;

Marker	RT						
No.	Group	Supposed metabolite	(min)	m/z	formula	adduct	ppm
						[M+H- H ₂ O]+	
1	WT	eicosasphinganine	9.54	312.3287	C ₂₀ H ₄₃ NO ₂		6
2	WT	Octadecanoic acid	7.8	284.2979	C ₁₈ H ₃₉ NO ₂	[M+H- H ₂ O]+	9
3	WT	Docosanamide	11.03	340.3603	C ₂₂ H ₄₅ NO	[M+H]+	8
4	WT	DGCC(16:0/20:5)	10.82	756.5796	C ₄₆ H ₇₉ NO ₈	[M+H- H ₂ O]+	2
5	EMS30	Antheraxanthin	13.47	607.3956	C ₄₀ H ₅₆ O ₃	[M+Na]+	28
6	EMS30	PA(P-16:0/20:4)	13.48	663.4583	C ₃₉ H ₆₉ O ₇ P	[M+H- H ₂ O]+	24
7	EMS30	Ganoderic acid V	13.48	551.3312	C ₃₂ H ₄₈ O ₆	[M+Na]+	5
8	EMS30	Hoslundin	14.74	429.0912	C ₂₃ H ₁₈ O ₇	[M+Na]+	8
9	EMS30	PG(22:6/21:0)	15.82	887.5728	C ₄₉ H ₈₅ O ₁₀ P	[M+Na]+	5
10	EMS30	Spectinomycin adenylate	14.73	684.205	C ₂₄ H ₃₆ N ₇ O ₁₃ P	[M+Na]+	7
11	EMS30	4,4'-Sulfonylbisacetanilide Benzyl	14.72	355.0719	C ₁₆ H ₁₆ N ₂ O ₄ S	[M+Na]+	1
12	EMS30	Dimethylphosphonoacetate	12	281.0555	C ₁₁ H ₁₅ O ₅ P	[M+Na]+	2
13	EMS30	PG(22:6/21:0)	15.49	887.5737	C ₄₉ H ₈₅ O ₁₀ P	[M+Na]+	5

b) Lipophilic compounds' differences between WT and EMS67;

Marker	RT						
No.	Group	Supposed metabolite	(min)	m/z	formula	adduct	ppm
						[M+H- H ₂ O]+	
1	WT	eicosasphinganine	9.54	312.3287	C ₂₀ H ₄₃ NO ₂		6
2	WT	Docosanamide	11.03	340.3603	C ₂₂ H ₄₅ NO	[M+H]+	8
3	WT	N-Docosylacetamide	12.24	368.3927	C ₂₄ H ₄₉ NO	[M+H]+	11
4	WT	Ixocarpanolide	13.48	495.2662	C ₂₈ H ₄₀ O ₆	[M+Na]+	11
5	WT	4,4'-Sulfonylbisacetanilide	15.27	355.0704	C ₁₆ H ₁₆ N ₂ O ₄ S	[M+Na]+	1
6	WT	Phe Cys Gly Leu	13.5	439.2021	C ₂₀ H ₃₀ N ₄ O ₅ S	[M+H]+	7
7	EMS67	Hoslundin	14.74	429.0921	C ₂₃ H ₁₈ O ₇	[M+Na]+	8
8	EMS67	PG(22:6/21:0)	15.82	887.5728	C ₄₉ H ₈₅ O ₁₀ P	[M+Na]+	5
9	EMS67	PG(22:6/21:0)	15.49	887.5737	C ₄₉ H ₈₅ O ₁₀ P	[M+Na]+	5
10	EMS67	PA(P-16:0/20:4)	13.48	663.4583	C ₃₉ H ₆₉ O ₇ P	[M+H- H ₂ O]+	24
11	EMS67	4,4'-Sulfonylbisacetanilide	14.72	355.0719	C ₁₆ H ₁₆ N ₂ O ₄ S	[M+Na]+	1
12	EMS67	Antheraxanthin	13.47	607.3956	C ₄₀ H ₅₆ O ₃	[M+Na]+	28
13	EMS67	Chlorophyllide	14.02	615.2473	C ₃₅ H ₃₄ MgN ₄ O ₅	[M+H]+	3
14	EMS67	Spectinomycin adenylate	14.73	684.205	C ₂₄ H ₃₆ N ₇ O ₁₃ P	[M+Na]+	7
15	EMS67	Palmitamide Benzyl	5.9	256.2659	C ₁₆ H ₃₃	[M+H]+	9
16	EMS67	Dimethylphosphonoacetate	12	281.0555	C ₁₁ H ₁₅ O ₅ P	[M+Na]+	2

17	EMS67	Anthemis glycoside A	14.96	832.2451	C39H49NO21	[M+H-2H2O]+	26
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PC abbreviated phosphatidylcholines, PI abbreviated glycerophosphoinositols; PG abbreviated glycerophosphoglycerols; PA abbreviated glycerophosphates.