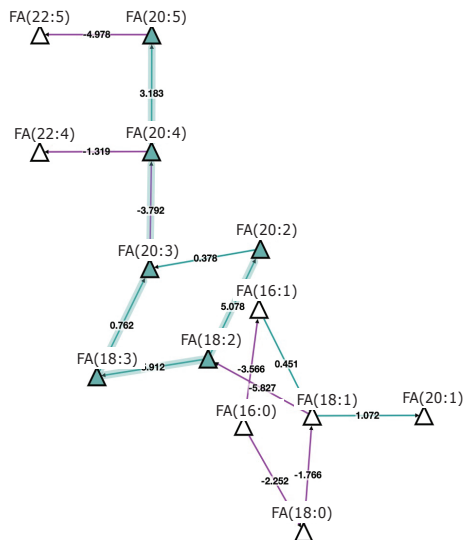
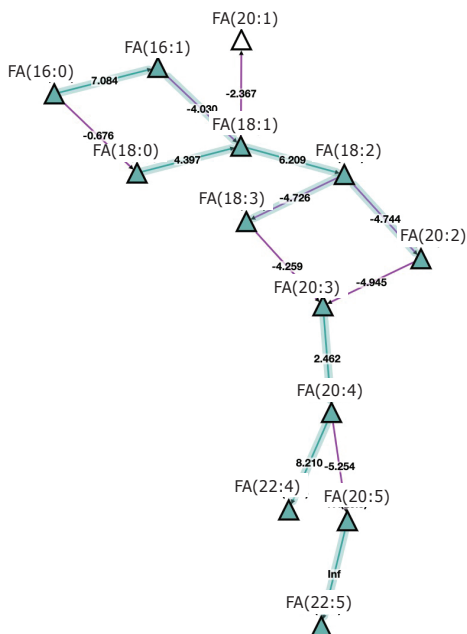


A The most active and suppressed reactions among FA between NAFLD-HCC and CTRL



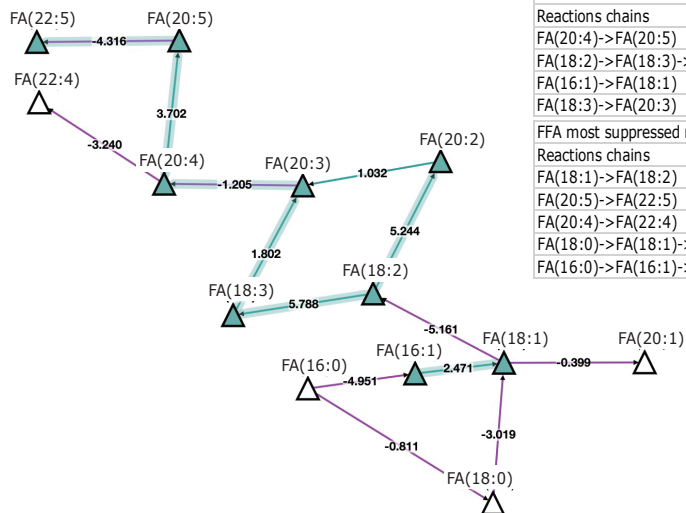
FFA most active reaction (NAFLD-HCC vs CTRL)		
Reactions chains	Z-score	Predicted genes
FA(20:4)->FA(20:5)	3.183	FADS1
FA(18:2)->FA(18:3)->FA(20:3)->FA(20:4)->FA(20:5)	3.032	FADS2, ELOVL5, ELOVL7, FADS1, FADS1
FFA most suppressed reaction (NAFLD-HCC vs CTRL)		
Reactions chains	Z-score	Predicted genes
FA(18:1)->FA(18:2)	5.827	FADS2
FA(18:0)->FA(18:1)->FA(18:2)	5.369	SCD1, FADS2
FA(20:5)->FA(22:5)	4.978	ELOVL5, ELOVL2
FA(20:3)->FA(20:4)->FA(22:4)	3.614	FADS1, ELOVL5, ELOVL2
FA(16:0)->FA(16:1)->FA(18:1)->FA(18:2)->FA(20:2)	1.932	SCD3, ELOVL5, ELOVL6, FADS2, ELOVL5

B The most active and suppressed reactions among FA between NAFLD-HCC and OB-NAFLD



FFA most active reaction (NAFLD-HCC vs OB-NAFLD)		
Reactions chains	Z-score	Predicted genes
FA(20:4)->FA(20:5)	5.254	FADS1
FA(18:2)->FA(18:3)	4.726	FADS2
FA(16:1)->FA(18:1)->FA(20:1)	4.523	ELOVL5, ELOVL6, ELOVL3
FA(20:2)->FA(20:3)->FA(20:4)->FA(20:5)	4.467	FADS1, FADS1, FADS1
FA(18:3)->FA(20:3)	4.259	ELOVL5, ELOVL7
FA(18:1)->FA(20:1)	2.367	ELOVL3
FFA most suppressed reaction (NAFLD-HCC vs OB-NAFLD)		
Reactions chains	Z-score	Predicted genes
FA(20:5)->FA(22:5)	Inf	ELOVL5, ELOVL2
FA(20:4)->FA(22:4)	8.21	ELOVL5, ELOVL2
FA(20:3)->FA(20:4)->FA(22:4)	7.546	FADS1, ELOVL5, ELOVL2
FA(18:1)->FA(18:2)	6.209	FADS2
FA(18:0)->FA(18:1)->FA(18:2)->FA(20:2)	3.384	SCD1, FADS2, ELOVL5
FA(16:0)->FA(16:1)->FA(18:1)->FA(18:2)->FA(20:2)	2.259	SCD3, ELOVL5, ELOVL6, FADS2, ELOVL5

C The most active and suppressed reactions among FA between NAFLD-HCC and AV-HCC



FFA most active reaction (NAFLD-HCC vs AV-HCC)		
Reactions chains	Z-score	Predicted genes
FA(20:4)->FA(20:5)	3.702	FADS1
FA(18:2)->FA(18:3)->FA(20:3)->FA(20:4)->FA(20:5)->FA(22:5)	2.581	FADS2, ELOVL5, ELOVL7, FADS1, FADS1, ELOVL5, ELOVL2
FA(16:1)->FA(18:1)	2.471	ELOVL5, ELOVL6
FA(18:3)->FA(20:3)	1.802	ELOVL5, ELOVL7
FFA most suppressed reaction (NAFLD-HCC vs AV-HCC)		
Reactions chains	Z-score	Predicted genes
FA(18:1)->FA(18:2)	5.161	FADS2
FA(20:5)->FA(22:5)	4.316	ELOVL5, ELOVL2
FA(20:4)->FA(22:4)	3.24	ELOVL5, ELOVL2
FA(18:0)->FA(18:1)->FA(18:2)->FA(20:2)	1.695	SCD1, FADS2, ELOVL5
FA(16:0)->FA(16:1)->FA(18:1)->FA(20:1)	1.662	SCD3, ELOVL5, ELOVL6, ELOVL3

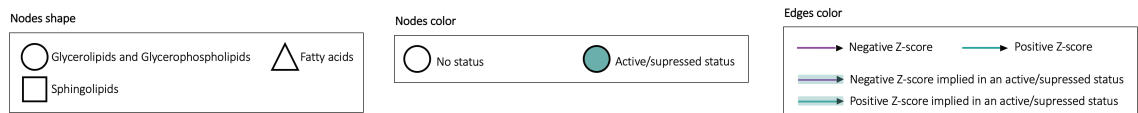


Figure S6