

**Table 1** Biomarker screening and basic parameter information of HQLYD in the treatment of type 2 diabetes mellitus

No.	Ion mode	Retention time (min)	Name	Formula	m/z	Trend in model group	HMDB	Regulated by HQLYD
1	M+H	0.23	L-Tyrosine	C9H11NO3	182.08	up	HMDB00158	√
2	M-H	0.49	Galactose	C6H12O6	179.06	up	HMDB00143	√
3	M-H	0.69	Citric acid	C6H8O7	191.01	up	HMDB00094	√
4	M+H	1.03	Isocitric acid	C6H8O7	215.01	down	HMDB00193	√
5	M+H	1.49	Uric acid	C5H4N4O3	169.04	up	HMDB00289	√
6	M+H	1.88	L-Leucine	C6H13NO2	132.1	up	HMDB00687	√
7	M+H	2.34	D-Glucose	C6H12O6	181.07	up	HMDB00122	√
8	M-H	2.92	L-Phenylalanine	C9H11NO2	164.07	up	HMDB00159	√
9	M-H	3.15	Pyruvic acid	C9H8O3	163.04	down	HMDB00205	
10	M+H	3.44	Glucose 6-phosphate	C6H13O9P	261.04	up	HMDB01401	
11	M+H	3.89	Acetylglycine	C4H7NO3	118.05	down	HMDB00532	√
12	M+H	4.08	3-Hydroxybutyric acid	C4H8O3	127.03	up	HMDB00357	√
13	M+H	4.46	Homocysteine	C4H9NO2S	136.04	down	HMDB00742	√
14	M+H	4.98	PC(18:3(9Z,12Z,15Z)/18:0)	C44H82NO8P	806.56	up	HMDB08201	
15	M+H	5.49	Sphinganine	C18H39NO2	302.3	down	HMDB00269	
16	M-H	5.76	D-Glutamine	C5H10N2O3	145.06	down	HMDB03423	√
17	M+H	6.13	LysoPC(16:0)	C24H50NO7P	518.33	up	HMDB10382	
18	M-H	6.65	LysoPC(14:0)	C22H46NO7P	466.29	up	HMDB10379	
19	M-H	7.28	PC(18:1(9Z)/15:0)	C41H80NO8P	744.56	up	HMDB08099	√
20	M-H	7.65	PE(14:0/22:1(13Z))	C41H80NO8P	744.56	up	HMDB08842	
21	M-H	7.91	LysoPC(0:0/18:0)	C26H54NO7P	522.35	up	HMDB11128	
22	M+H	8.44	LysoPC(18:0)	C26H54NO7P	524.37	up	HMDB10384	
23	M-H	8.77	PC(15:0/20:3(8Z,11Z,14Z))	C43H80NO8P	768.55	up	HMDB07948	√
24	M+H	9.15	Palmitic amide	C16H33NO	256.26	up	HMDB12273	√
25	M+H	9.38	PE(14:0/24:1(15Z))	C43H84NO8P	796.59	up	HMDB08849	√