

Table S-1. List of labeled ions in HeLa cells cultured for 48 hours in 50% U-¹³C glucose. Compound_m/z represents the m/z of the base peak of each isotopologue group.

Compound_m/z	RT(min)	p_value	Compound_m/z	RT(min)	p_value
85.0296	35.8	1.36E-02	198.0406	39.6	8.71E-05
87.0087	35.8	5.53E-05	200.0563	8.6	3.61E-04
88.0402	23.8	1.14E-05	210.0883	26.5	5.48E-03
88.0404	29.0	1.19E-03	211.0008	36.3	7.08E-05
96.0091	34.6	2.04E-03	211.0010	30.7	3.04E-03
98.0247	20.3	2.08E-04	214.0489	17.9	7.07E-03
102.0558	34.6	1.76E-02	214.0721	39.6	1.74E-04
102.0559	24.1	5.70E-03	216.0512	39.6	1.34E-03
104.0357	17.5	2.48E-03	221.0126	19.6	3.37E-02
107.0364	9.6	9.58E-03	226.9418	36.1	6.42E-03
110.0244	8.6	3.40E-05	226.9686	19.5	3.11E-02
110.0247	39.6	7.80E-04	227.0648	17.2	4.14E-01
111.0087	39.6	1.92E-03	228.0989	26.5	3.06E-03
111.0089	35.8	9.94E-04	238.0333	39.6	3.47E-03
115.0513	28.8	8.54E-04	240.0517	39.6	7.59E-04
128.0352	39.6	1.56E-03	241.0119	30.2	2.03E-03
128.0353	24.0	2.88E-02	241.0727	15.6	3.57E-03
128.0353	26.5	1.47E-02	242.0306	39.6	2.89E-02
128.0714	39.6	7.54E-03	242.0801	15.5	1.10E-03
129.0191	35.7	9.37E-05	243.0625	8.4	3.19E-04
130.0508	29.0	1.01E-03	244.0652	8.3	1.18E-05
132.0301	23.8	6.45E-04	245.0432	21.5	9.92E-04
133.0141	29.4	5.09E-03	245.0687	8.2	7.18E-03
134.0470	7.1	2.07E-02	252.0877	19.7	2.36E-01
134.0470	8.3	1.83E-02	253.0929	12.8	1.99E-04
134.0472	5.5	1.51E-02	254.0784	26.5	9.10E-04
134.0473	2.9	4.81E-03	255.2339	15.2	3.62E-01
134.0474	9.6	7.61E-03	258.0618	39.6	6.58E-03
135.0299	21.0	2.36E-04	259.0162	22.7	8.07E-03
140.0355	8.7	1.00E-03	259.0226	29.8	2.80E-04
144.0664	28.9	2.29E-03	261.0734	28.8	1.04E-05
145.0620	17.1	1.29E-02	262.0878	26.5	1.74E-02
146.0458	34.6	4.14E-04	267.0738	16.3	1.07E-04
146.0459	24.0	3.94E-05	267.0926	9.6	7.47E-03
147.0295	35.8	1.06E-02	271.0572	34.7	9.68E-01
148.9911	19.5	7.51E-04	272.0889	32.6	1.08E-03
150.9801	36.4	2.62E-04	272.0892	26.5	9.01E-04
152.0716	39.6	5.61E-02	272.1251	19.4	2.90E-04
155.0462	34.6	6.51E-04	272.9570	37.8	2.09E-04
155.0823	26.5	6.03E-02	273.0381	29.7	2.88E-04
166.0179	21.9	3.35E-04	275.0889	34.0	5.99E-03
168.9904	36.4	5.58E-04	280.9791	19.5	5.80E-02
170.0818	39.6	1.04E-02	282.0843	14.8	4.19E-04
172.0613	39.6	2.42E-03	283.2653	14.8	2.90E-01
174.0409	29.0	5.67E-05	284.0412	39.6	1.62E-04
182.0458	34.6	2.72E-02	285.0730	34.6	1.52E-05
186.0385	17.6	4.13E-03	286.0603	21.9	4.03E-04
188.0565	28.8	3.68E-05	286.9356	19.5	2.50E-02
191.0196	35.8	1.94E-04	287.0785	34.6	2.48E-04
193.0165	9.9	1.74E-05	288.0661	26.5	9.18E-04

Compound_m/z	RT(min)	p_value	Compound_m/z	RT(min)	p_value
195.0507	22.5	3.22E-04	289.0331	29.8	4.74E-04
196.0225	29.0	3.88E-04	298.9902	19.5	3.70E-01
196.0615	39.6	1.49E-03	300.0010	36.3	4.27E-04
300.0414	30.1	4.12E-02	378.0980	29.8	1.22E-02
301.0652	23.9	2.08E-02	380.0290	39.6	1.68E-04
302.0522	39.6	4.16E-05	381.0068	8.8	4.48E-03
302.0996	28.7	1.56E-03	381.9712	36.3	2.58E-04
303.0836	34.6	1.07E-03	382.9958	30.8	1.78E-03
305.0182	37.7	6.22E-03	382.9958	37.7	2.90E-03
305.0681	32.6	3.86E-03	383.1151	18.8	9.27E-05
305.5705	32.6	9.98E-03	384.9840	36.3	1.14E-03
306.0763	32.6	6.11E-03	384.9846	30.0	3.14E-04
306.0770	26.5	5.40E-03	384.9849	37.7	1.29E-05
313.1131	17.0	8.23E-02	390.9929	24.0	8.49E-02
315.0805	24.0	1.46E-04	401.0061	30.8	1.32E-03
317.0991	34.5	3.17E-04	402.0111	36.6	1.33E-02
320.0628	39.6	9.85E-04	402.9951	36.3	1.61E-04
321.0500	30.1	5.95E-06	402.9954	37.7	5.48E-04
322.0452	30.2	2.04E-07	404.0334	9.5	1.57E-05
323.0285	36.3	1.64E-05	404.1313	38.1	3.53E-02
323.0285	37.7	2.24E-04	405.1467	15.6	1.12E-02
323.0289	30.7	1.53E-05	406.9667	24.0	7.44E-01
324.9454	36.4	2.68E-03	408.0120	37.8	1.68E-01
325.0656	34.6	1.91E-04	409.1101	34.6	4.09E-06
326.0560	7.1	1.04E-01	421.1757	15.5	9.23E-04
326.0570	9.5	1.11E-05	421.2264	12.4	1.51E-01
328.0463	37.8	1.21E-04	422.0879	35.6	3.40E-04
328.0586	26.5	2.22E-02	423.9928	36.7	7.14E-04
328.2316	15.0	9.14E-03	424.0332	30.8	4.60E-04
329.2340	15.2	3.72E-02	424.1302	9.6	5.62E-04
331.0549	24.0	1.21E-01	424.9768	37.6	3.76E-05
333.0597	23.2	3.12E-05	426.0137	31.1	3.94E-03
334.1262	19.6	1.38E-04	426.0226	37.9	2.33E-07
337.0624	24.0	1.99E-01	427.1272	12.7	1.06E-02
341.0391	34.6	1.02E-03	427.9886	37.6	3.90E-07
342.0444	39.6	7.18E-03	428.1096	15.5	1.50E-01
344.0325	26.5	5.75E-03	432.0478	17.5	4.90E-02
345.1436	15.7	6.56E-02	434.0262	3.7	2.21E-04
346.0560	37.9	2.37E-06	434.0265	5.4	9.28E-07
346.0561	30.7	2.19E-05	435.1363	14.8	2.01E-03
348.0875	29.8	7.81E-04	436.2844	12.3	3.16E-03
350.0448	17.5	1.43E-02	437.0071	37.9	2.35E-03
351.1047	29.0	3.01E-04	439.9962	39.6	6.39E-03
356.0491	5.5	5.42E-04	440.9508	37.7	2.01E-03
356.0495	3.6	3.07E-04	442.0171	40.0	3.49E-06
358.0181	39.6	2.75E-04	442.1690	14.2	3.22E-02
362.0049	29.9	1.16E-04	442.1931	13.7	5.32E-03
362.0188	39.6	2.84E-05	444.0694	35.6	3.10E-03
362.0510	33.2	1.76E-05	444.9517	37.7	1.42E-04
364.9125	19.5	2.72E-01	447.3116	15.5	4.85E-02
366.1088	12.6	3.12E-02	447.9620	37.7	3.07E-05
367.1063	12.6	1.07E-02	448.0040	37.9	6.43E-05
368.0369	30.7	9.81E-03	450.2630	12.6	2.73E-01
368.1235	12.1	9.23E-02	452.2788	12.5	1.81E-04
369.1217	12.1	5.07E-02	453.0209	30.1	5.56E-05
370.1265	12.3	1.48E-02	458.0063	39.6	2.26E-03

Compound_m/z	RT(min)	p_value	Compound_m/z	RT(min)	p_value
370.1387	11.9	1.47E-04	460.0433	35.6	9.29E-02
371.1369	12.0	2.28E-05	460.1865	15.3	5.98E-01
371.1593	15.2	2.37E-02	462.9618	37.7	3.39E-02
374.1760	2.2	2.28E-02	463.9766	37.9	1.33E-03
464.0005	9.6	1.25E-03	555.2736	15.5	1.78E-02
467.9788	37.8	1.47E-05	558.0016	36.3	2.70E-05
468.1297	32.2	6.40E-04	558.9497	37.7	1.66E-03
468.1300	30.0	5.42E-05	562.0350	24.1	3.62E-04
473.1527	37.9	6.36E-03	563.0689	29.9	7.00E-04
474.1883	15.0	1.64E-01	563.9661	37.8	1.22E-03
478.2948	12.4	2.72E-02	565.0485	30.1	1.39E-07
478.9838	30.8	5.16E-04	565.0748	29.7	2.18E-03
479.9883	36.6	2.76E-03	566.0790	29.8	3.22E-03
480.9726	37.7	5.05E-03	567.1364	2.3	1.95E-01
480.9734	31.0	1.10E-02	569.2738	16.4	2.03E-02
485.9892	37.8	1.14E-04	573.2205	15.4	1.84E-02
487.1327	8.6	1.65E-05	574.9942	17.7	9.70E-01
489.1588	2.3	1.95E-01	575.1434	9.5	3.53E-03
494.0474	29.8	5.63E-08	578.0087	24.1	8.02E-04
495.1016	36.2	5.31E-05	579.0270	36.3	8.88E-05
498.2635	12.5	1.20E-02	580.3618	2.7	2.79E-02
500.2788	12.5	1.32E-02	580.3622	10.4	3.28E-02
501.2809	12.3	8.63E-03	580.9311	37.7	1.86E-03
502.0106	30.8	3.53E-03	581.9769	37.9	7.09E-05
503.9998	37.9	1.40E-05	587.0296	30.1	2.72E-03
504.0003	31.1	1.08E-02	588.0752	31.9	3.14E-04
504.9598	37.7	3.99E-03	591.0257	17.6	4.24E-01
506.1885	15.4	2.20E-01	593.1721	5.4	2.04E-05
508.4739	2.1	6.61E-04	593.1726	3.6	6.66E-04
509.1143	8.7	2.30E-03	595.2895	16.3	1.90E-02
509.2894	15.5	1.46E-02	596.5265	2.1	3.37E-02
509.3517	14.8	4.10E-02	597.3050	16.2	2.30E-03
510.1589	8.9	1.87E-06	600.0316	17.0	5.23E-01
513.2051	14.6	6.30E-05	601.0076	36.3	6.46E-04
513.3110	12.5	6.57E-02	603.0039	30.1	5.66E-04
514.0509	17.5	5.83E-03	603.9585	37.9	1.13E-03
516.2539	14.8	1.81E-02	604.0705	32.0	6.16E-04
519.9938	40.0	1.38E-03	606.0748	29.9	1.39E-06
522.0422	30.1	2.61E-04	608.9888	17.8	8.89E-01
522.4893	2.1	3.14E-02	611.1452	32.6	2.02E-03
524.2783	12.3	2.80E-02	612.1810	16.4	1.50E-01
525.9812	37.9	4.13E-02	613.1406	29.2	7.54E-05
526.3149	2.7	2.79E-02	613.1602	26.5	1.15E-02
530.3232	12.1	4.80E-03	616.4711	10.2	1.78E-03
533.1870	9.5	5.10E-04	616.9834	36.3	1.44E-02
534.4895	2.1	1.48E-03	618.5831	2.1	8.60E-02
535.0376	30.1	1.04E-04	620.0204	35.7	1.13E-05
535.1927	9.6	1.09E-02	621.3034	16.2	8.76E-03
535.4934	2.1	1.28E-02	621.9686	37.9	1.67E-03
536.5051	2.1	1.17E-04	622.9949	36.3	1.52E-02
540.0545	24.1	1.00E-07	624.0660	16.5	4.78E-01
540.9390	37.7	8.72E-03	628.0559	29.8	2.74E-06
545.1994	15.2	9.76E-03	628.1771	16.5	7.46E-03
548.1996	16.3	1.98E-01	632.2045	23.1	1.56E-05
550.3619	9.6	1.06E-04	633.1264	32.6	1.53E-03
552.2745	12.1	3.18E-04	635.1220	29.2	1.08E-01
552.3303	2.7	5.61E-02	635.1411	26.5	5.27E-02

Compound_m/z	RT(min)	p_value	Compound_m/z	RT(min)	p_value
552.3306	10.5	3.42E-04	635.3209	16.1	5.32E-01
554.3459	2.7	9.14E-02	636.9266	37.7	1.09E-02
554.3462	10.5	2.91E-05	638.9647	36.3	3.79E-05
555.1690	9.5	1.91E-02	639.5573	2.0	6.91E-01
642.9037	18.2	2.43E-02	746.5143	2.8	2.93E-03
644.0307	29.8	6.46E-05	746.5144	11.4	4.14E-05
644.2672	15.5	1.06E-02	747.5187	14.0	1.31E-05
644.5987	2.1	5.88E-03	748.5224	13.9	5.13E-06
645.0329	29.9	9.57E-06	748.5284	6.7	7.60E-04
646.6140	2.1	1.15E-02	748.5284	11.4	1.60E-02
649.1005	32.6	5.46E-02	748.5294	9.8	1.27E-02
649.3368	16.0	1.54E-03	749.4185	16.2	2.09E-02
651.1162	26.5	1.51E-02	750.5437	2.8	2.16E-02
653.2086	16.4	2.99E-01	751.4338	16.2	1.52E-02
653.5354	1.9	2.05E-02	756.0226	29.9	1.16E-02
656.9968	17.6	9.26E-01	757.4855	16.4	5.12E-02
657.0038	36.3	2.15E-03	758.4985	16.4	1.56E-02
657.1230	26.5	1.53E-02	760.5150	16.4	2.84E-03
659.9542	37.9	1.96E-04	761.5809	10.2	8.75E-02
662.1019	24.1	3.22E-05	762.0309	29.9	9.35E-03
662.2501	15.6	6.22E-01	762.5099	11.4	7.10E-02
663.1109	39.6	2.32E-03	762.5127	2.9	2.57E-02
664.1176	30.4	1.39E-03	764.0359	17.0	4.19E-01
664.4193	16.2	1.26E-02	764.5250	11.4	1.79E-01
669.2035	16.5	1.68E-04	764.5250	9.8	2.34E-01
670.3479	15.0	1.35E-01	764.5283	2.8	3.42E-02
671.4914	1.9	2.63E-02	766.3780	12.6	5.76E-03
672.6305	2.1	1.34E-01	766.3841	1.9	2.72E-01
673.0971	26.6	2.71E-02	766.5392	11.4	1.03E-02
678.2780	15.5	5.45E-03	766.5393	2.9	1.30E-03
679.0843	39.6	2.51E-02	766.5395	9.8	1.62E-01
682.0337	17.0	3.85E-01	770.3020	15.5	5.66E-04
682.5896	2.1	4.47E-02	771.5194	13.5	1.33E-02
684.0518	30.0	4.71E-03	773.1978	34.9	5.08E-05
686.0998	30.4	6.43E-03	773.5335	2.7	1.30E-02
686.1418	30.0	4.45E-05	773.5349	13.6	1.66E-03
688.4926	9.9	1.00E-03	775.5485	13.8	1.46E-04
688.4927	11.6	2.34E-02	777.4142	16.4	1.78E-01
695.0798	26.9	6.42E-03	777.4498	16.1	2.28E-02
709.6098	2.1	8.68E-04	778.0049	29.8	2.52E-03
714.5085	11.6	2.86E-02	782.4976	16.4	6.27E-03
716.5239	11.6	6.57E-04	784.1500	30.2	1.86E-03
717.2889	15.3	1.05E-02	784.5126	16.4	9.79E-03
718.3791	12.6	7.22E-02	785.5170	16.4	2.20E-05
719.4879	13.9	3.73E-03	786.5293	16.4	1.07E-02
720.4991	11.5	1.35E-02	788.5449	16.4	1.62E-03
722.5138	9.8	9.91E-03	790.5399	11.4	1.92E-01
722.5140	11.5	6.98E-05	790.5405	9.7	2.64E-01
723.4031	16.2	1.06E-05	790.5581	2.9	2.04E-04
730.4666	16.4	2.74E-02	791.3861	1.9	4.69E-01
732.4820	16.5	1.55E-04	792.5528	11.4	1.18E-02
738.5080	11.5	1.37E-02	793.5034	13.3	4.38E-02
738.5083	2.8	1.73E-01	795.5193	13.3	5.82E-03
738.5089	9.8	1.09E-03	796.2265	26.5	2.16E-01
738.9996	17.6	8.93E-01	797.5346	13.5	6.06E-02
740.0482	29.9	1.20E-03	799.5500	13.3	4.83E-02
740.3639	12.6	4.31E-05	805.4824	15.9	9.98E-02

Compound_m/z	RT(min)	p_value	Compound_m/z	RT(min)	p_value
742.0686	35.7	3.21E-05	806.4991	16.4	2.22E-02
742.5382	9.9	4.30E-02	807.5025	15.3	3.29E-03
742.5401	11.5	8.22E-02	808.4563	16.2	4.80E-02
745.5038	13.7	4.33E-03	808.5130	16.4	1.87E-02
810.5299	16.4	7.01E-02	919.3522	15.6	4.41E-01
811.5336	16.4	3.13E-02	922.4926	11.4	2.07E-01
812.5441	16.4	1.70E-03	928.5924	10.9	2.64E-01
816.5758	2.9	1.75E-01	935.3807	15.5	6.55E-02
817.5039	13.0	3.21E-03	935.5991	11.6	4.03E-02
818.5913	2.9	3.57E-03	937.6134	11.6	3.43E-03
819.5189	13.2	3.80E-02	938.4894	11.4	2.97E-01
824.5465	16.4	1.48E-04	940.5035	11.4	5.28E-01
831.1351	24.1	6.22E-03	943.6040	11.4	2.94E-03
831.5030	15.2	4.31E-02	943.6296	11.6	5.81E-04
832.5062	15.1	6.91E-02	948.5932	8.5	1.75E-02
833.5182	15.2	3.82E-02	958.5777	8.9	3.42E-02
834.5294	16.4	1.10E-02	959.5809	8.9	3.70E-02
835.5350	15.2	4.61E-06	959.6004	11.5	1.47E-02
836.5432	16.4	8.32E-03	963.6283	11.5	2.14E-03
838.5593	16.4	1.11E-02	964.2059	26.6	2.34E-03
839.4159	16.0	3.73E-03	966.5835	8.8	3.87E-05
840.5686	16.4	4.63E-03	967.6045	11.4	4.21E-04
841.5021	12.8	2.94E-02	968.6549	10.1	1.53E-01
842.5891	16.4	2.45E-03	969.6172	11.4	1.39E-02
843.5171	12.9	2.61E-03	974.3915	15.4	5.44E-03
843.5398	15.0	1.44E-01	974.5572	26.7	4.09E-03
844.6074	6.8	4.23E-02	974.6100	8.2	3.39E-03
847.1107	24.1	1.18E-03	980.1803	26.6	1.08E-02
847.5367	15.0	2.76E-02	982.5786	8.9	6.16E-02
855.5023	15.0	5.71E-02	983.6172	9.7	2.71E-04
857.5184	15.1	1.22E-02	985.6145	11.4	6.70E-02
858.5231	15.1	3.73E-02	985.6305	10.0	5.33E-02
859.5331	15.1	2.90E-02	986.6102	8.9	2.24E-02
861.5490	15.1	2.25E-02	987.6286	11.4	9.52E-03
862.5583	16.4	3.38E-03	988.6190	9.3	1.79E-02
865.5033	12.9	1.31E-01	990.5860	8.9	4.92E-03
867.5409	14.9	3.89E-05	990.6043	9.7	8.42E-05
869.0927	24.1	3.51E-03	991.0901	32.5	5.65E-06
869.6756	10.0	2.67E-03	991.2906	32.5	7.25E-04
871.6891	10.0	5.88E-02	991.4913	32.5	2.44E-04
872.6924	10.0	4.94E-02	991.5879	8.9	3.48E-02
873.5535	15.0	2.65E-02	991.6915	32.5	9.46E-05
873.6846	10.0	2.20E-03	991.8922	32.5	4.80E-03
874.6830	10.0	2.37E-02	992.0926	32.5	8.15E-04
875.5253	10.1	4.11E-02	992.5983	8.8	3.76E-02
877.6102	10.2	3.10E-02	1004.6463	8.0	5.30E-02
878.3942	15.3	2.57E-03	1005.6045	9.6	3.17E-01
881.5187	15.1	5.94E-02	1006.5804	8.8	4.78E-02
883.5345	15.1	4.60E-02	1008.5947	8.9	1.47E-01
885.0669	24.1	2.72E-04	1010.6083	8.8	7.29E-05
885.5508	15.0	1.02E-03	1010.6212	9.8	4.75E-02
896.4787	11.5	3.48E-01	1011.0865	32.5	6.58E-03
898.6002	11.6	5.77E-03	1011.2868	32.5	2.71E-05
899.5663	14.9	9.01E-02	1011.4880	32.5	1.02E-03
900.5700	14.9	6.89E-02	1018.6137	8.8	4.30E-01
901.3703	15.5	2.27E-02	1027.4044	15.5	7.25E-04
909.5501	15.0	4.36E-04	1028.6559	8.0	1.20E-02

Compound_m/z	RT(min)	p_value	Compound_m/z	RT(min)	p_value
909.5838	11.6	2.15E-02	1031.6210	9.6	1.23E-02
911.5638	15.0	2.60E-03	1033.6339	9.7	4.07E-03
914.5810	15.0	1.65E-03	1034.6138	8.9	3.74E-03
916.5042	11.5	1.32E-01	1066.3233	19.6	7.94E-04
1078.7640	9.9	8.36E-03	1239.3636	32.5	3.46E-05
1090.6212	15.1	1.38E-01	1239.6142	32.5	4.78E-07
1092.6362	15.2	1.84E-01	1239.8652	32.5	1.36E-03
1118.6499	15.2	1.34E-01	1240.1156	32.5	7.73E-04
1223.2960	32.6	6.62E-04	1325.2095	24.1	1.88E-03
1239.1126	32.5	1.66E-04			