

Lahiri et al, Supplementary Figure 1(related to Figure 2)

W-Beijing

A. Down in mutants (52)

Fold decrease

Mass	RT (min)	Carbon	Fatty Acyl	Name	S531L	Q513E	H526Y
298.34567	27.1			unannotated	10.2	9.3	4.6
301.14993	7.0			unannotated	2.6	2.3	2.2
329.23033	7.0			unannotated	4.0	2.2	2.1
372.15093	23.2			unannotated	4.1	2.3	6.8
409.16339	6.5			unannotated	4.2	7.4	2.0
435.24937	4.3			unannotated	3.1	2.4	3.6
463.42678	15.8			unannotated	2.2	2.3	2.1
493.28997	20.9			unannotated	2.5	5.0	2.4
511.30502	21.0			unannotated	2.1	2.4	2.0
516.38920	6.4			unannotated	2.2	4.6	2.6
555.21618	4.5			unannotated	2.0	4.5	4.1
560.41600	5.5			unannotated	2.5	4.7	2.0
577.34540	4.5			unannotated	2.8	2.2	5.5
582.36648	21.4			unannotated	3.2	4.3	6.6
596.38193	19.8			unannotated	2.0	2.3	2.1
602.34816	4.5			unannotated	2.6	2.1	24.3
619.27632	4.3			unannotated	4.7	4.2	2.3
624.37701	22.0			unannotated	2.9	2.0	2.3
630.36853	4.5			unannotated	2.0	2.1	2.0
634.45307	8.6			unannotated	2.2	3.6	16.0
644.47872	4.5			unannotated	2.8	3.5	5.2
713.51153	6.3			unannotated	2.4	3.2	2.2
738.52875	23.2			unannotated	4.3	2.2	2.5
749.52993	8.2			unannotated	3.9	2.6	2.7
775.20655	24.8			unannotated	3.3	3.8	4.8
785.25630	10.2	35	(8:1)		1	8.6	4.3
799.27200	10.2	36	(9:1)		1	6.7	3.8
815.30243	8.6	37	(10:0)		1	3.0	2.9
841.32422	8.6	39	(12:1)		1	4.9	3.1
846.44531	6.4			unannotated	2.1	3.7	3.0
909.45943	5.9	46	(19:1)		2	4.7	3.1
911.47224	6.1	46	(19:0)		2	2.7	2.6
1071.47042	4.9			unannotated	3.1	2.6	5.5
1090.91134	20.5			unannotated	2.5	2.3	6.2
1120.96076	23.7			unannotated	3.2	2.8	2.6
1127.53497	4.5			unannotated	2.1	2.4	6.0
1167.77527	6.1			unannotated	2.6	3.4	2.4
1296.96320	20.9	70	(58:0)		3	3.3	2.5
1339.91504	22.9			unannotated	2.3	2.4	2.5
1364.02857	20.4	76	(65:0)		3	2.2	2.4
1381.06021	20.4	76	(64:0)		3	2.0	2.1
1395.05993	20.4	77	(64:0)		3	2.5	2.1
1409.09730	22.5			unannotated	2.0	2.2	2.7
1496.16473	22.5	82	(70:0)		3	2.5	2.0
1520.12015	19.3			unannotated	2.2	2.0	3.3
1583.76361	20.1			unannotated	2.3	2.1	2.2
1652.49423	4.5			unannotated	2.7	2.2	4.8
1666.51008	4.5			unannotated	3.3	2.1	3.5
1680.52883	4.5			unannotated	2.9	2.0	2.8
1694.53922	4.5			unannotated	2.6	2.0	4.0
1929.38135	6.9			unannotated	2.4	2.0	2.3

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B. Up in mutants (120)

fold increase

Mass	RT (min)	Name	S531L	Q513E	H526Y
306.10101	18.5	unannotated	7.2	10.6	7.6
315.12432	4.3	unannotated	2.7	2.3	2.3
325.27763	7.5	unannotated	2.0	2.2	2.0
372.20593	26.4	unannotated	2.1	2.4	2.3
391.03823	36.0	unannotated	2.0	2.0	2.1
413.26715	38.5	unannotated	2.2	8.1	2.6
437.26213	19.2	unannotated	6.9	7.4	3.5
459.24530	5.5	unannotated	2.4	2.1	2.2
464.37310	4.5	unannotated	2.0	2.6	2.1
470.24620	26.4	unannotated	2.5	2.5	2.2
474.30517	4.3	unannotated	3.7	6.7	6.0
482.37156	5.4	unannotated	6.1	6.5	3.0
488.32340	4.3	unannotated	6.0	2.6	3.2
508.36300	26.4	unannotated	2.1	4.2	2.8
514.35845	7.1	unannotated	2.4	5.8	2.0
538.37455	28.0	unannotated	2.2	2.9	2.4
554.42522	6.2	unannotated	4.1	2.2	2.3
564.35930	27.2	unannotated	2.4	5.3	3.2
570.42250	6.3	unannotated	2.4	5.1	2.9
575.37928	6.3	unannotated	4.9	5.2	3.3
577.51923	12.5	unannotated	4.8	2.2	2.7
584.52482	3.7	unannotated	2.1	4.9	3.7
593.50530	4.0	unannotated	4.8	2.0	2.4
607.53100	5.9	unannotated	2.0	2.1	2.4
608.38666	27.2	unannotated	2.3	2.0	2.0
621.58201	25.0	unannotated	2.7	4.5	2.0
632.51423	4.5	unannotated	2.0	4.4	2.3
641.53659	6.5	unannotated	4.4	4.2	2.1
657.53212	6.5	unannotated	4.3	4.3	2.8
681.52500	6.3	unannotated	4.1	3.3	2.5
686.50700	8.0	unannotated	2.6	4.1	2.7
697.48120	5.5	unannotated	2.1	4.0	2.3
697.52916	6.5	unannotated	2.0	4.0	2.6
702.49885	10.8	unannotated	2.2	3.5	2.5
708.55258	9.7	unannotated	3.0	3.2	2.8
747.52223	21.5	unannotated	2.5	2.3	2.2

Lahiri et al, Supplementary Figure 1(related to Figure 2)

Mass	RT (min)	Name	S531L	Q513E	H526Y
774.55400	4.3	unannotated	2.6	3.4	2.5
822.75440	3.3	unannotated	2.7	2.1	3.4
825.55135	23.5	unannotated	2.3	3.3	2.1
828.60810	5.8	unannotated	3.3	3.2	2.6
837.55123	23.5	unannotated	2.8	3.1	2.4
842.57625	24.0	unannotated	3.2	3	2.1
850.54846	24.5	unannotated	3.2	3.1	2.4
853.58213	23.2	unannotated	3.1	3	2.4
856.58809	23.2	unannotated	2.2	2.4	2.1
860.69223	22.5	unannotated	2.1	2	2.6
864.79974	3.3	unannotated	2.0	2.2	2.4
868.59286	26.0	unannotated	2.2	2	2.0
892.83373	3.3	unannotated	2.3	2.1	2.2
895.58800	6.3	unannotated	3.2	2.3	2.0
898.63734	25.0	unannotated	2.8	2	2.3
900.62604	5.0	unannotated	3.4	2.9	4.6
905.59630	5.0	unannotated	2.4	2.3	2.6
909.14653	30.1	unannotated	2.2	2.0	2.0
911.58523	6.3	unannotated	2.1	2.1	2.4
916.62800	5.0	unannotated	3.0	2.9	2.3
919.59410	5.0	unannotated	2.4	2.5	2.2
921.59200	5.0	unannotated	2.3	2.4	2.3
934.64114	4.1	unannotated	2.2	2.9	3.0
950.63667	4.1	unannotated	2.5	2.3	2.7
958.68710	22.5	unannotated	2.3	2.0	2.4
967.65201	22.0	unannotated	2.1	2.7	2.9
970.65723	27.0	unannotated	2.3	2.2	2.0
974.64200	21.5	unannotated	2.3	2.2	2.0
984.67623	26.0	unannotated	2.4	2.0	2.7
990.68130	24.3	unannotated	3.1	2.1	2.3
990.94334	3.5	unannotated	3.3	2.4	2.8
993.66591	4.1	unannotated	3.0	2.7	2.3
1000.78005	4.1	unannotated	2.2	2.3	2.0
1078.57112	4.1	unannotated	2.1	2.2	2.2
1092.59798	4.1	unannotated	2.4	2.5	2.2
1106.61107	4.1	unannotated	2.2	2.2	2.0
1138.77327	4.1	unannotated	2.1	2.1	2.0
1170.75345	4.1	unannotated	2.3	2.1	2.2
1199.14851	3.3	unannotated	3.2	2.5	2.4
1211.15322	3.3	unannotated	2.0	2.5	3.8
1217.68237	26.0	unannotated	2.9	2.6	2.1
1225.17280	3.3	unannotated	2.6	2.4	3.7

Lahiri et al, Supplementary Figure 1(related to Figure 2)

Mass	RT (min)	Name	S531L	Q513E	H526Y
1253.86500	26.0	unannotated	3.1	2.4	2.3
1270.89129	22.0	unannotated	2.6	2.3	2.2
1298.92876	22.5	unannotated	3.1	2.3	2.3
1303.88251	19.3	unannotated	3.5	2.0	2.9
1347.92398	20.5	unannotated	2.8	2.3	2.2
1349.94324	24.0	unannotated	2.0	2.2	2.3
1351.953450	24.0	unannotated	2.1	2.0	2.3
1377.981060	20.8	unannotated	2.1	2.3	2.9
1384.037120	23.0	unannotated	2.7	2.0	2.1
1392.992190	20.2	unannotated	2.1	2.0	2.3
1395.012870	20.1	unannotated	2.7	2.3	2.3
1420.491890	24.0	unannotated	2.9	2.0	2.4
1423.813650	24.0	unannotated	2.2	2.2	2.4
1424.029800	20.6	unannotated	2.0	2.2	2.3
1451.283560	6.0	unannotated	2.0	2.2	8.9
1454.061250	13.0	unannotated	2.8	2.1	3.6
1498.060230	21.5	unannotated	2.6	2.0	2.4
1520.041030	12.5	unannotated	2.4	2.0	7.0
1573.122030	23.0	unannotated	2.5	2.1	2.5
1587.141450	8.9	unannotated	2.3	2.2	6.2
1602.115420	14.0	unannotated	2.3	2.1	2.4
1690.119100	24.3	unannotated	2.1	2.8	4.9
1707.161260	23.5	unannotated	2.0	2.1	3.8
2074.931330	23.2	unannotated	2.1	2.1	4.3
2140.890910	25.0	unannotated	2.2	2.2	2.3
2150.461000	23.2	unannotated	2.1	3.7	9.2
2188.684500	22.5	unannotated	2.0	2.2	2.0
2269.492900	24.0	unannotated	2.2	3.2	2.0
2286.522560	24.0	unannotated	2.1	2.2	2.2
2314.544320	25.3	unannotated	2.0	3.2	2.4
2510.382500	22.8	unannotated	2.0	2.1	2.5
2522.384210	22.5	unannotated	2.1	2.1	2.3
2559.730120	23.4	unannotated	2.3	2.1	5.7
2568.731340	23.2	unannotated	2.2	2.1	2.3
2569.225600	23.5	unannotated	2.0	3.5	8.0
2570.720890	23.5	unannotated	2.1	2.0	3.7
2576.753670	23.3	unannotated	2.0	3.1	5.5
2581.734790	23.3	unannotated	2.0	2.1	6.6
2780.962560	20.0	unannotated	2.0	2.0	2.1
2798.998900	20.0	unannotated	2.2	2.0	2.1
2801.991340	20.5	unannotated	2.0	2.3	2.1
2803.475460	20.5	unannotated	2.1	2.0	2.1

Lahiri et al, Supplementary figure 2 (related to Figure 2)

A. CDC1551 – down in mutants (38)					Fold decrease		
Mass	RT (min)	Carbon	Fatty Acyl	Name	S531L	Q513E	H526Y
485.354520	5.2			unannotated	2.4	2.8	2.3
711.355890	6.1			unannotated	3.0	4.6	2.2
773.261130	8.7	34	(7:0)	1	3.6	32.3	16.0
785.262250	7.1	35	(8:1)	1	4.1	19.8	19.6
797.293330	7.1			unannotated	3.5	6.7	8.2
799.281740	8.1	36	(9:1)	1	3.7	23.3	20.1
801.292830	6.2	36	(9:0)	1	2.9	14.6	11.2
815.308910	6.9	37	(10:0)	1	5.2	16.8	12.4
827.308830	7.1	38	(11:1)	1	9.1	26.3	32.4
829.323730	7.0	38	(11:0)	1	8.2	30.4	35.0
841.320740	6.9	39	(12:1)	1	10.6	22.2	13.5
845.315670	8.7			unannotated	3.9	2.9	7.9
857.316450	8.7			unannotated	5.1	3.3	2.6
859.332200	8.1			unannotated	4.5	6.1	9.2
861.502500	3.8			unannotated	15.0	2.3	2.6
871.332810	7.8			unannotated	4.4	4.0	7.6
881.317750	7.8			unannotated	3.5	3.6	8.2
890.720910	21.3			unannotated	2.5	6.2	5.2
909.457660	5.5	46	(19:1)	2	12.2	5.8	8.7
911.471600	5.5	46	(19:0)	2	9.1	6.4	8.8
916.737310	22.0			unannotated	2.4	2.3	2.3
944.761370	22.0			unannotated	2.0	2.9	2.5
996.386450	6.7			unannotated	2.0	2.2	2.3
1029.439430	6.5			unannotated	2.7	2.8	2.3
1098.938820	20.0			unannotated	2.3	4.3	3.0
1124.951830	20.9			unannotated	2.4	4.3	3.9
1140.984270	20.6			unannotated	2.2	2.1	2.0
1152.980120	20.6			unannotated	2.4	3.7	2.9
1205.709450	7.1			unannotated	2.1	2.3	2.6
1558.164230	18.4			unannotated	2.2	2.4	2.0
1564.418850	3.9			unannotated	2.6	9.7	15.8
1679.532700	3.9			unannotated	2.9	2.0	3.3
1694.559210	3.9			unannotated	3.1	2.6	4.4
1857.478360	16.9			unannotated	2.2	3.1	2.5
1896.513640	17.1			unannotated	2.0	2.1	2.0
1900.531290	16.9			unannotated	2.8	8.2	4.5
2740.904430	20.1			unannotated	2.1	2.1	2.0
2745.932400	20.1			unannotated	2.3	2.2	2.1

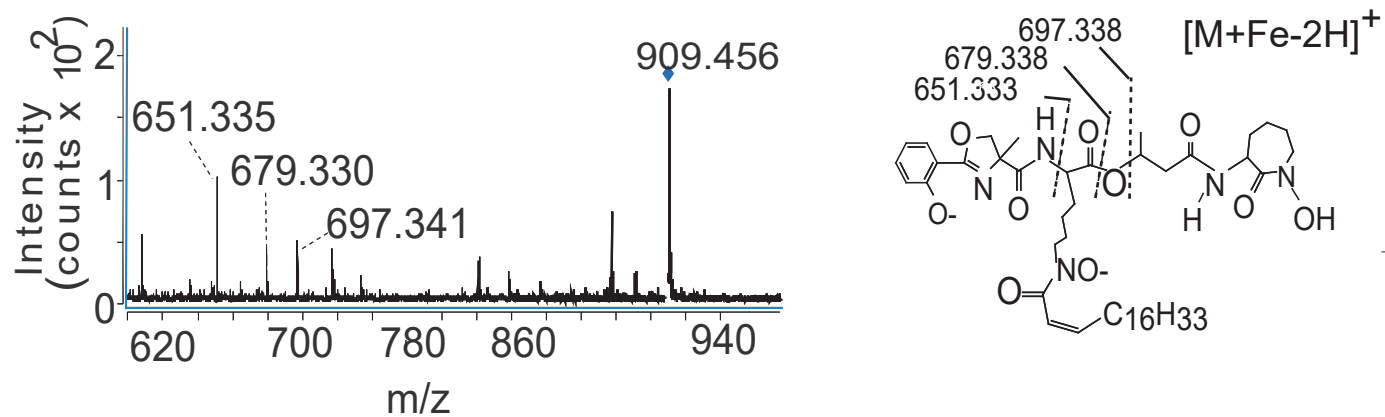
Lahiri et al, Supplementary figure 2 (related to Figure 2)

B. CDC1551- Up in mutants (64)					
			fold increase		
Mass	RT (min)	Name	S531L	Q513E	H526Y
283.218150	22.2	unannotated	2.1	13.5	19.8
304.046340	5.2	unannotated	2.3	12.2	15.4
318.280340	5.2	unannotated	2.7	9.5	16.2
380.078120	5.2	unannotated	2.2	8.8	22.3
394.322480	6.4	unannotated	2.7	6.2	11.9
399.149550	6.4	unannotated	2.1	2.7	2.9
410.083340	6.4	unannotated	2.3	7.4	15.7
414.183400	6.4	unannotated	2.2	7.8	2.7
415.255510	22.2	unannotated	2.2	4.8	16.6
432.283830	22.2	unannotated	2.0	11.2	14.7
440.091120	6.4	unannotated	2.1	5.1	18.3
448.254670	5.4	unannotated	2.8	2.7	5.5
453.336890	6.4	unannotated	2.5	6.7	11.5
460.209540	6.4	unannotated	2.3	3.8	4.8
462.072740	6.4	unannotated	2.5	2.6	8.8
467.178400	6.4	unannotated	2.4	2.9	12.8
467.302810	28.0	unannotated	2.7	7.3	16.5
470.106670	7.5	unannotated	2.3	12.8	20.1
470.362100	6.4	unannotated	2.5	2.0	2.1
475.205640	5.2	unannotated	2.1	13.6	2.4
475.318910	6.4	unannotated	2.3	4.6	12.3
476.302850	23.5	unannotated	2.8	9.3	13.9
478.252610	6.4	unannotated	2.6	2.4	12.5
481.266430	23.5	unannotated	2.3	8.3	7.2
482.370550	5.2	unannotated	2.8	10.0	17.2
489.318100	28.0	unannotated	2.6	17.3	17.4
498.381520	5.4	unannotated	2.2	3.2	5.3
507.330410	5.2	unannotated	2.7	4.6	3.0
509.194800	7.5	unannotated	2.3	8.2	4.5
511.331320	28.0	unannotated	2.5	4.7	19.8
516.127410	7.5	unannotated	2.3	11.2	17.6
526.394190	5.4	unannotated	2.9	9.9	15.2
530.350660	7.5	unannotated	2.2	2.0	2.8
531.356530	5.2	unannotated	2.2	2.7	13.0
533.346700	28.0	unannotated	2.7	8.5	22.3
546.138230	7.5	unannotated	2.5	6.6	2.4
557.120250	7.5	unannotated	2.3	2.8	2.7
570.421550	5.7	unannotated	2.6	2.4	4.4

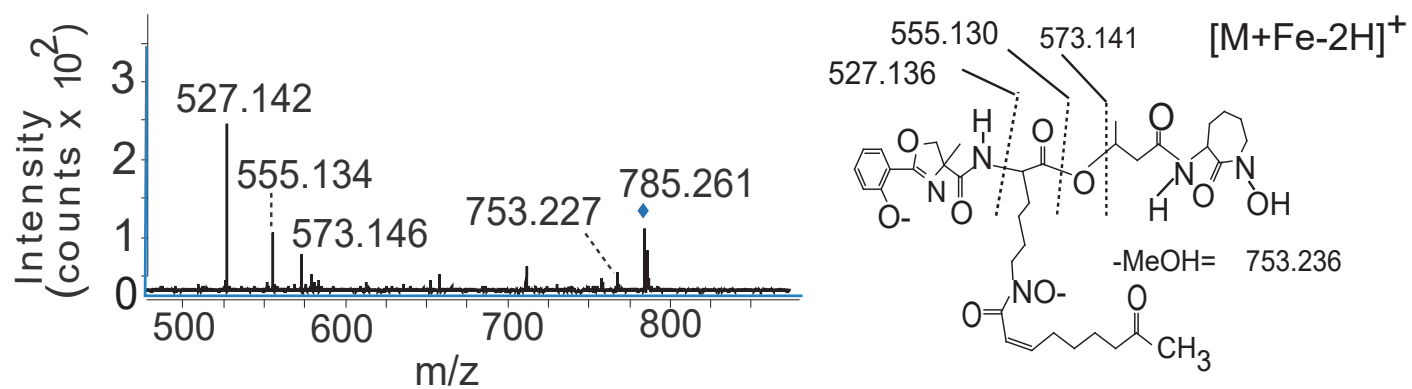
Lahiri et al, Supplementary figure 2 (related to Figure 2)

Mass	RT (min)	Name	Fold increase		
575.374630	5.7	unannotated	2.3	2.0	2.0
576.148420	7.5	unannotated	2.6	2.8	8.9
583.372560	13.0	unannotated	2.4	2.4	2.3
598.450310	5.7	unannotated	3.1	2.2	2.0
646.437320	13.0	unannotated	2.1	2.5	2.2
658.471920	7.5	unannotated	2.9	8.6	15.7
730.530340	7.5	unannotated	2.6	2.5	2.2
732.484440	5.4	unannotated	2.2	3.5	2.7
734.536630	7.5	unannotated	2.3	2.0	2.1
740.549270	6.4	unannotated	2.2	3.7	13.9
746.533950	13.0	unannotated	2.4	7.1	12.8
758.560410	7.5	unannotated	2.7	12.0	2.8
784.576130	7.5	unannotated	2.2	2.4	2.0
787.544630	6.2	unannotated	2.5	2.6	2.4
804.586450	13.0	unannotated	2.8	2.4	2.8
839.602900	6.4	unannotated	2.7	2.0	2.3
942.423220	6.4	unannotated	2.3	2.8	2.1
948.888230	38.2	unannotated	2.0	9.7	2.1
959.711850	7.5	unannotated	2.9	2.5	2.3
1505.109210	20.3	unannotated	3.1	2.8	2.3
1539.029230	20.3	unannotated	2.3	2.2	2.0
1564.116410	20.3	unannotated	2.6	2.8	3.3
1566.113530	20.3	unannotated	2.2	2.1	2.1
1593.126760	5.9	unannotated	2.0	2.4	2.3
1625.187330	16.1	unannotated	3.3	2.5	2.2
2919.712400	21.8	unannotated	2.1	2	2.7

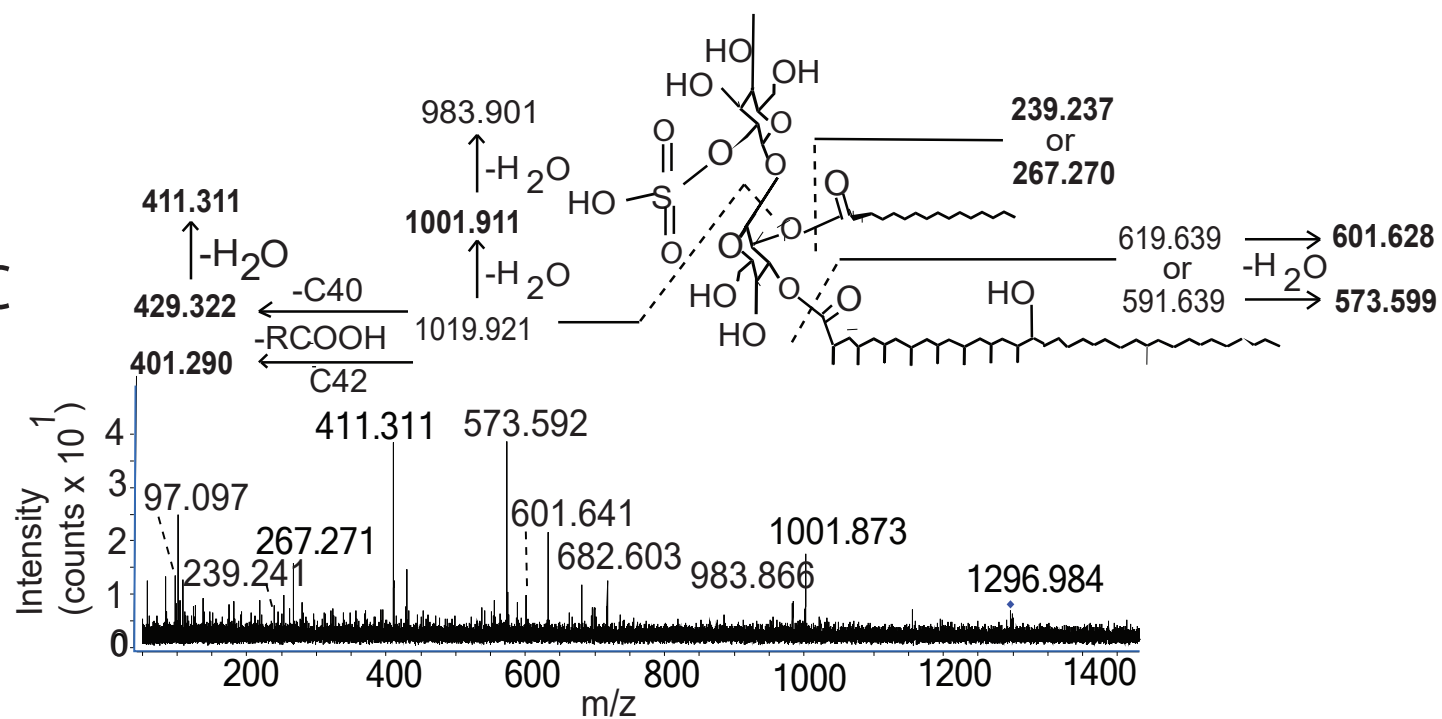
A

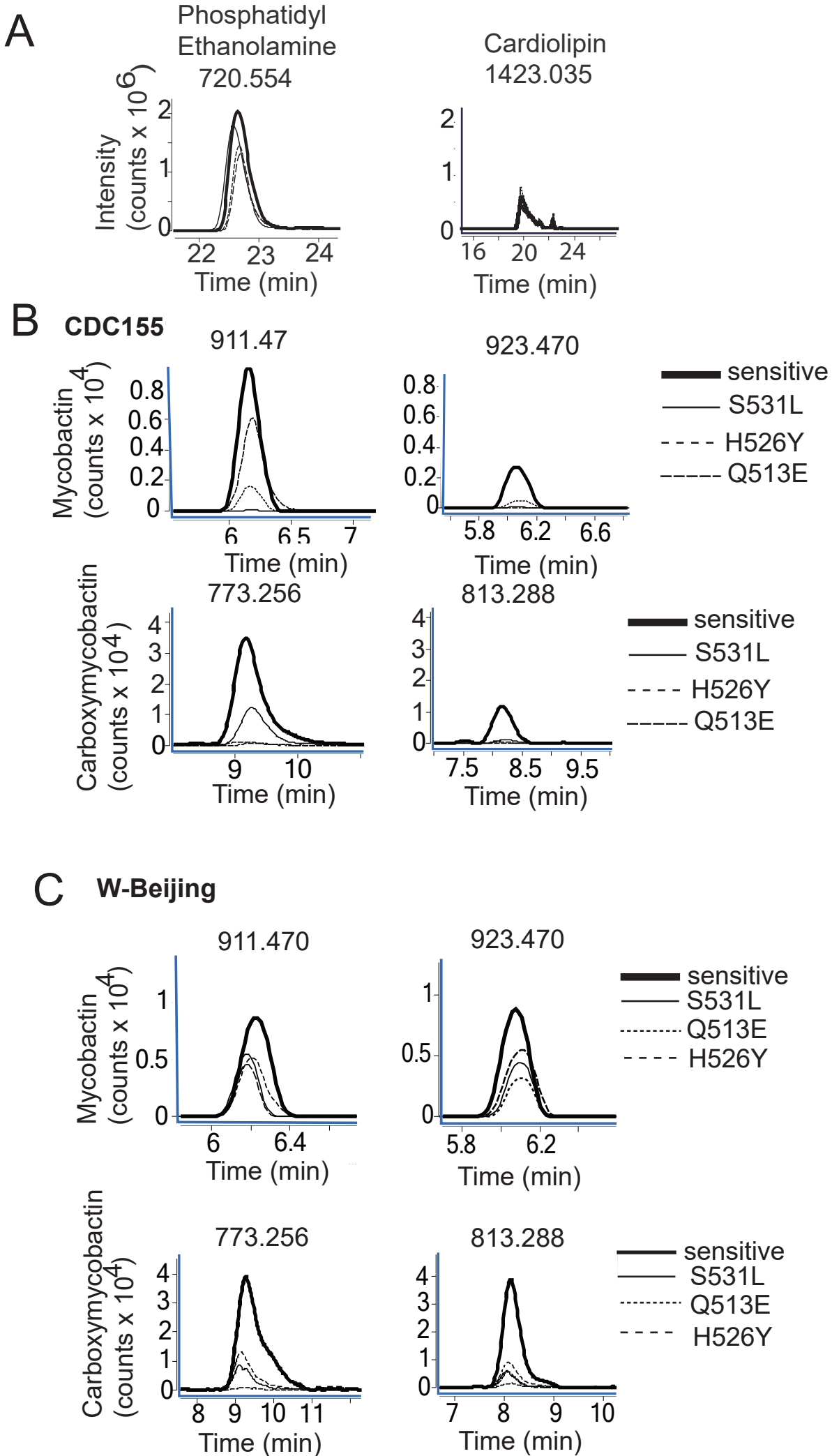


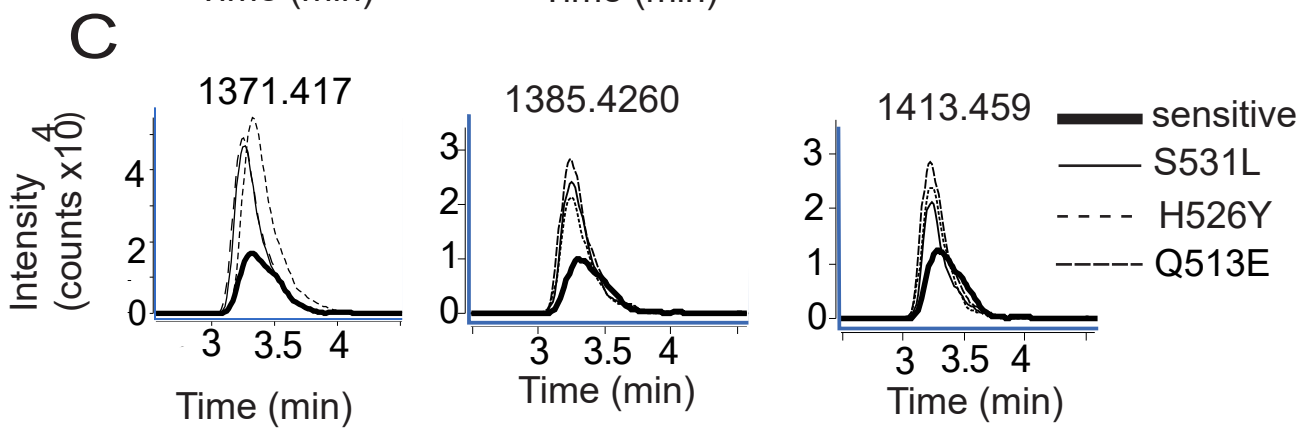
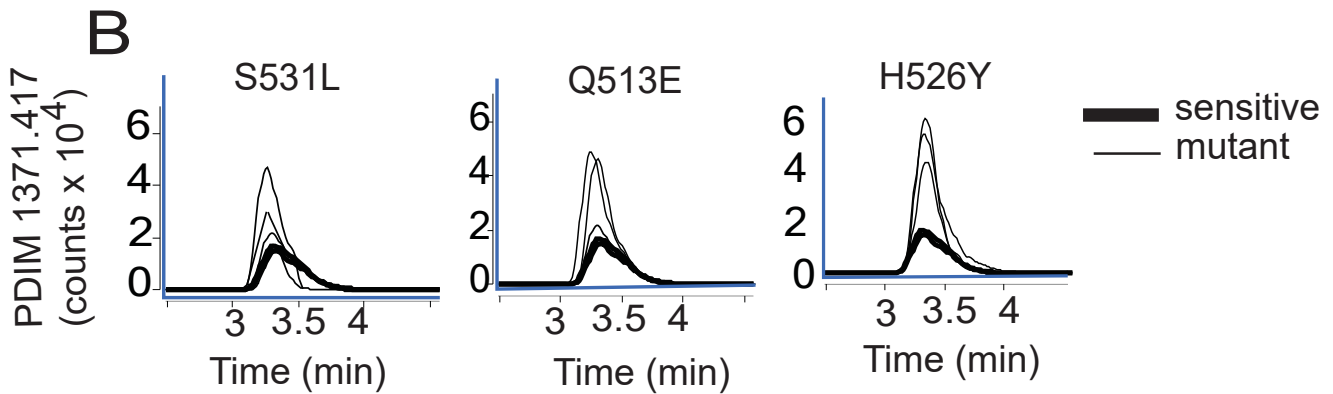
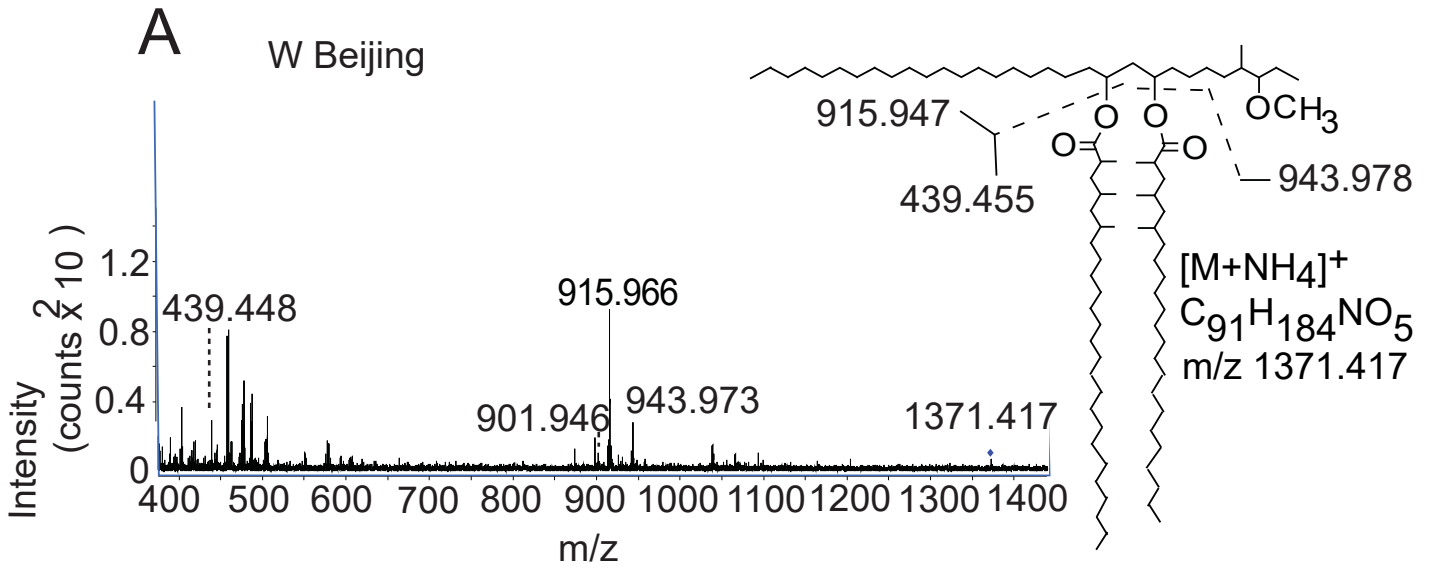
B



C







Legends to Supplementary Figures

SUPPLEMENTARY FIGURE 1. Globally changed events detected in the W-Beijing strain of *M. tuberculosis*. Globally changed events are defined as those events whose intensity is altered by two-fold (corrected $p < 0.05$) among all three drug resistant mutants (S531L, Q523E, H526Y) as compared to the drug sensitive parental strain, indicating fold changes. The indicated names are considered preliminary annotations that were derived by matching the measured m/z value to the MycoMass dataset. These annotations were subsequently confirmed by CID-MS. The number 1, 2, 3 in the table denote the annotation for carboxymycobactins, mycobactins and diacylated sulfoglycolipids respectively.

SUPPLEMENTARY FIGURE 2. Globally changed events detected in the CDC1551 strain of *M. tuberculosis*. Globally changed events are defined as those events whose intensity is altered by two-fold (corrected $p < 0.05$) among all three drug resistant mutants (S531L, Q523E, H526Y) as compared to the drug sensitive parental strain, indicating fold changes. The indicated names are considered preliminary annotations that were derived by matching the measured m/z value to the MycoMass dataset. These annotations were subsequently confirmed by CID-MS. 1 and 2 in the table denote the annotation for carboxymycobactins, and mycobactins respectively.

SUPPLEMENTARY FIGURE 3. Positive mode CID-MS of lipids of interest. CID spectra of A. mycobactin, m/z 909, B. carboxymycobactin, m/z 785, and C. Ac2SGL, m/z 1296, along with the corresponding chemdraw-generated structure, which support the fragmentation profiles show in Figures 3A and 4A.

SUPPLEMENTARY FIGURE 4. Manual analysis of carboxymycobactins and mycobactins with masses that are in alkane series. A. After total input lipids were normalized based on measured mass, they yielded similar time-intensity curves from each mutant indicating equivalent loading for lipidomics analysis. B-C. Extracted ion chromatograms of lipids from the *M. tuberculosis* strain CDC1551 (B) and W-Beijing (C) were analyzed for low abundance mycobactins (m/z values of 911 and 923) and carboxymycobactin (m/z values of 773 and 813) in alkane series.

SUPPLEMENTARY FIGURE S5. Altered Phthiocerol dimycocerosate in rifampin resistance mutants. A. The identify of an ion from the W-Beijing strain (m/z 1371) was identified matched the reported mass of phthiocerol dimycocerosate (PIDM) detected as an ammonium adduct. CID-MS of the ion demonstrated fragments consistent with the phthiocerol backbone and the polyketide side chains. B. Triplicate ion chromatograms from the indicated W-Beijing mutant (S531L, Q513E, H526Y) compared to the drug sensitive parent showed increases in signal for PDIM in the mutants. C. EICs showing the intensities of PDIM chain length analogs (m/z 1371.4, 1385.4, 1413.5) showed similar patterns of change. These results are typical of 2 or more experiments.