

Supplementary Information:

Table S1: Data tensors' size obtained in different acquisition configurations using AGC target value 1.0×10^6 .

	RP 7,500		RP 15,000		RP 30,000		RP 60,000		RP 120,000	
IT / ms	Naphthalene	Blank	Naphthalene	Blank	Naphthalene	Blank	Naphthalene	Blank	Naphthalene	Blank
1	7408	7408	4493	4493	2460	2460	1292	1292	663	663
2	7105	7106	4493	4493	2460	2460	1292	1292	663	663
3	6829	6829	4493	4493	2460	2460	1292	1292	663	663
4	6566	6565	4493	4493	2460	2460	1292	1292	663	663
5	6331	6331	4493	4493	2460	2460	1292	1292	663	663
10	5356	5356	4493	4493	2460	2460	1292	1292	663	663
20	4095	4095	4495	4095	2460	2460	1292	1292	663	663
30	3315	3315	3315	3315	2460	2460	1292	1292	663	663
40	2785	2785	2784	2785	2460	2460	1292	1292	663	663
50	2401	2401	2400	2400	2400	2400	1292	1292	663	663
70	1882	1882	1882	1882	1881	1881	1292	1292	663	663
90	1547	1547	1547	1548	1547	1547	1292	1292	663	663
100	1421	1421	1421	1421	1421	1421	1291	1291	663	663

Table S2: Data tensors' size obtained in different acquisition configurations using AGC target value 1.0×10^6 .

IT / ms	RP 7,500		RP 15,000		RP 30,000		RP 60,000		RP 120,000	
	Naphthalene	Blank	Naphthalene	Blank	Naphthalene	Blank	Naphthalene	Blank	Naphthalene	Blank
1	2763	2764	2204	2204	1569	1569	995	995	575	575
2	2711	2711	2175	2175	1554	1554	989	989	573	573
3	2658	2658	2151	2150	1541	1541	984	984	571	571
4	2609	2610	2124	2124	1527	1527	979	979	570	569
5	2561	2560	2098	2098	1513	1514	973	973	568	568
10	2345	2345	1979	1979	1451	1450	946	946	559	559
20	2008	2007	1778	1777	1339	1339	898	896	542	542
30	1755	1755	1613	1613	1244	1244	853	853	525	525
40	1559	1559	1477	1477	1161	1161	814	814	510	510
50	1402	1402	1360	1360	1088	1088	777	778	496	495
70	1167	1168	1168	1167	968	968	714	714	469	469
90	1000	1000	1000	1000	871	871	660	660	445	445
100	933	933	933	933	830	830	636	636	434	434

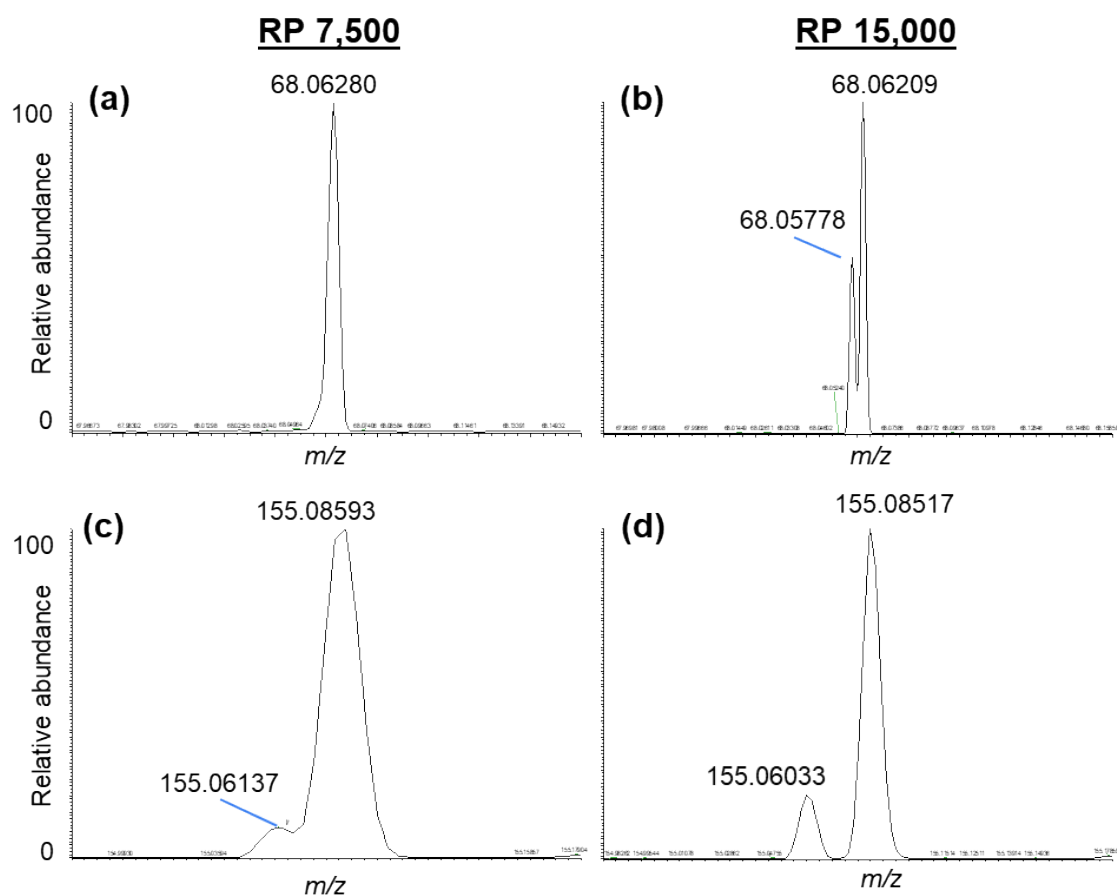


Figure S1: Critical pairs of a kerosene sample evaluated for 7,500 (**a** and **c**) and 15,000 (**b** and **d**) mass resolving power values. It's observed that a RP of 15,000 was necessary to distinguish two peaks in the 68 Da cluster and baseline resolve peaks in the 155 Da cluster.