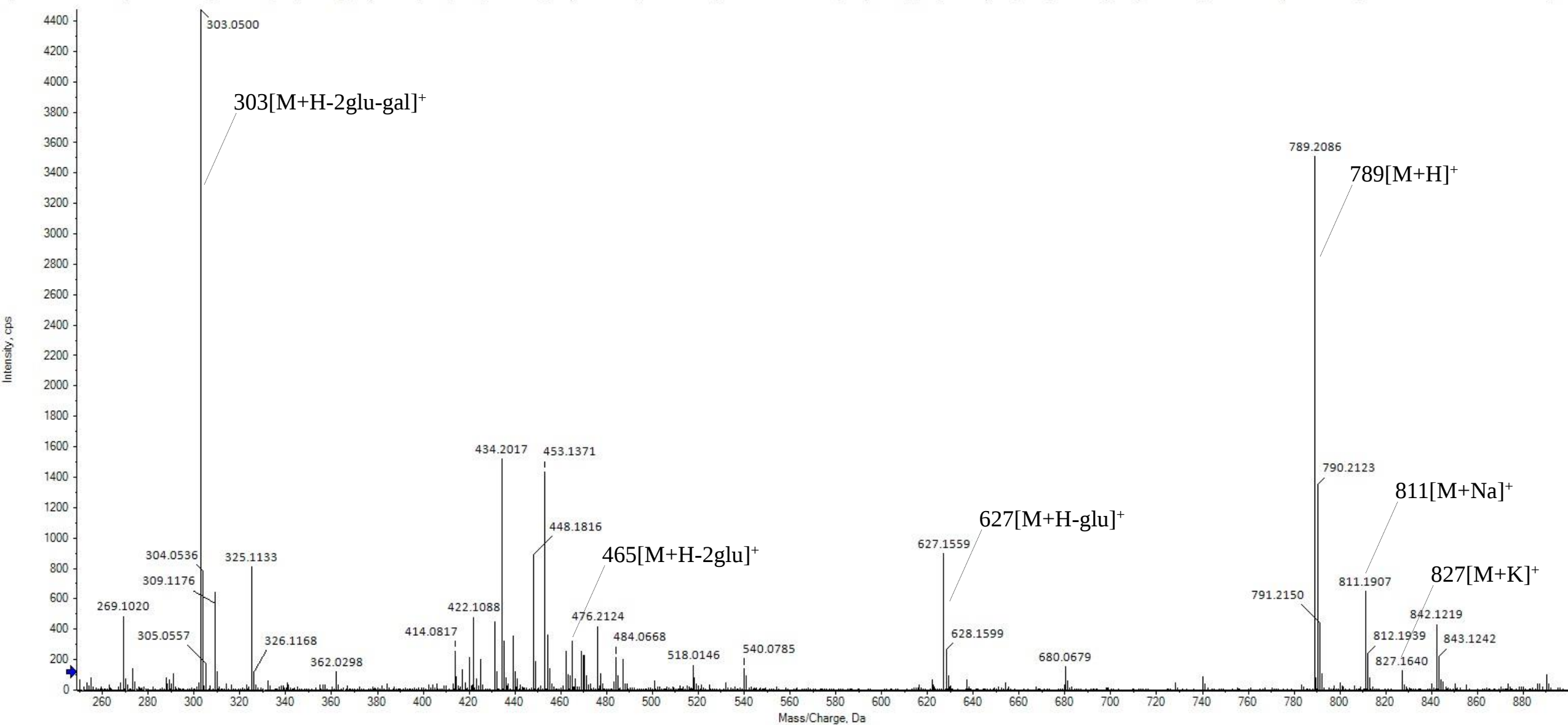


Supplementary Figure S2. Positive fragmentation of the 55 flavonol derivatives identified from young leaves of 21 soybean cultivars. **K**, kaempferol; **Q**, quercetin; **I**, isorhamnetin; gal, galactoside (galactosyl); glu, glucoside (glucosyl); rham, rhamnoside (rhamnosyl); gen, gentiobiose; neo, neohesperidose; rob, robinobiose; rut, rutinose; sop, sophorose. Compound names of each peak are presented in Table 2.

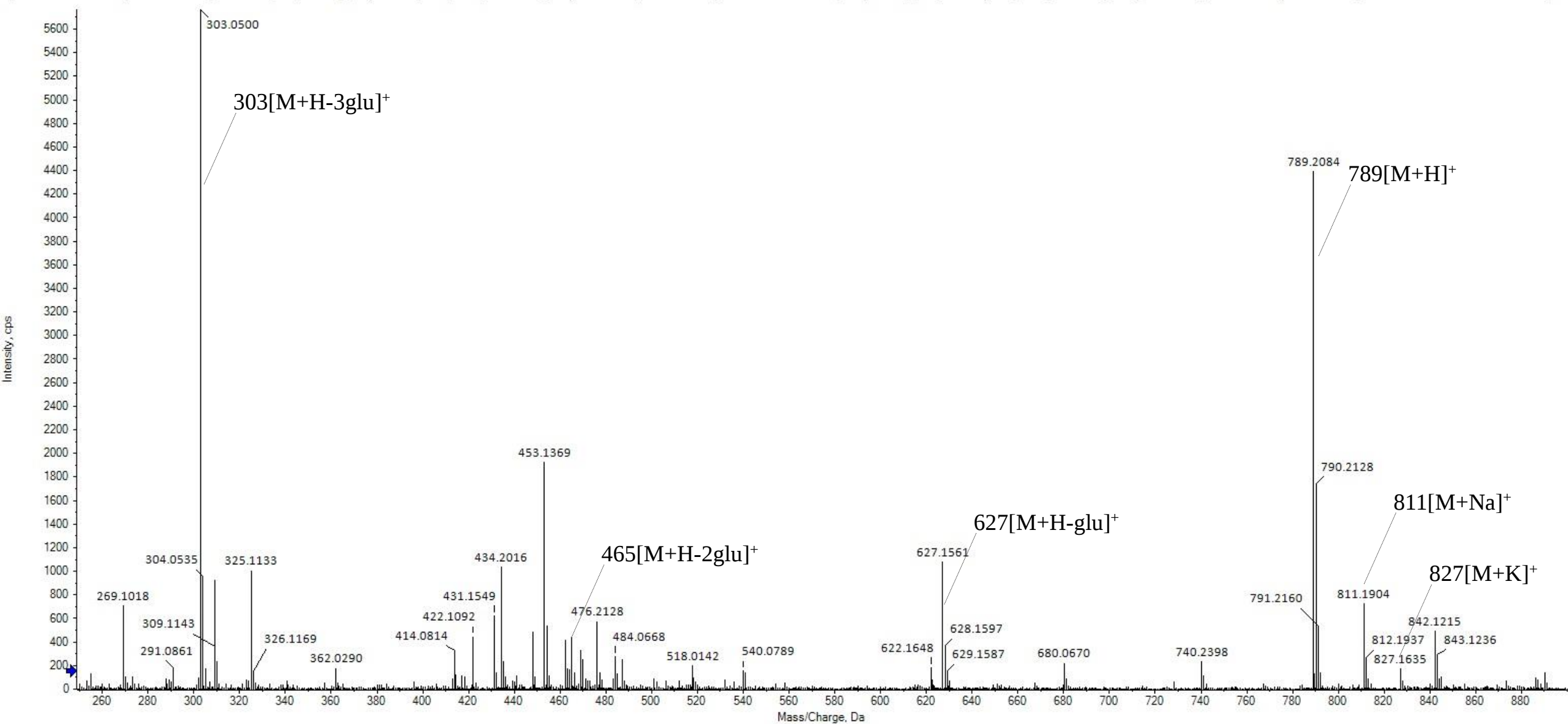
Peak 1_Q 3-O-(2,6-di-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 11.732 to 11.810 min]



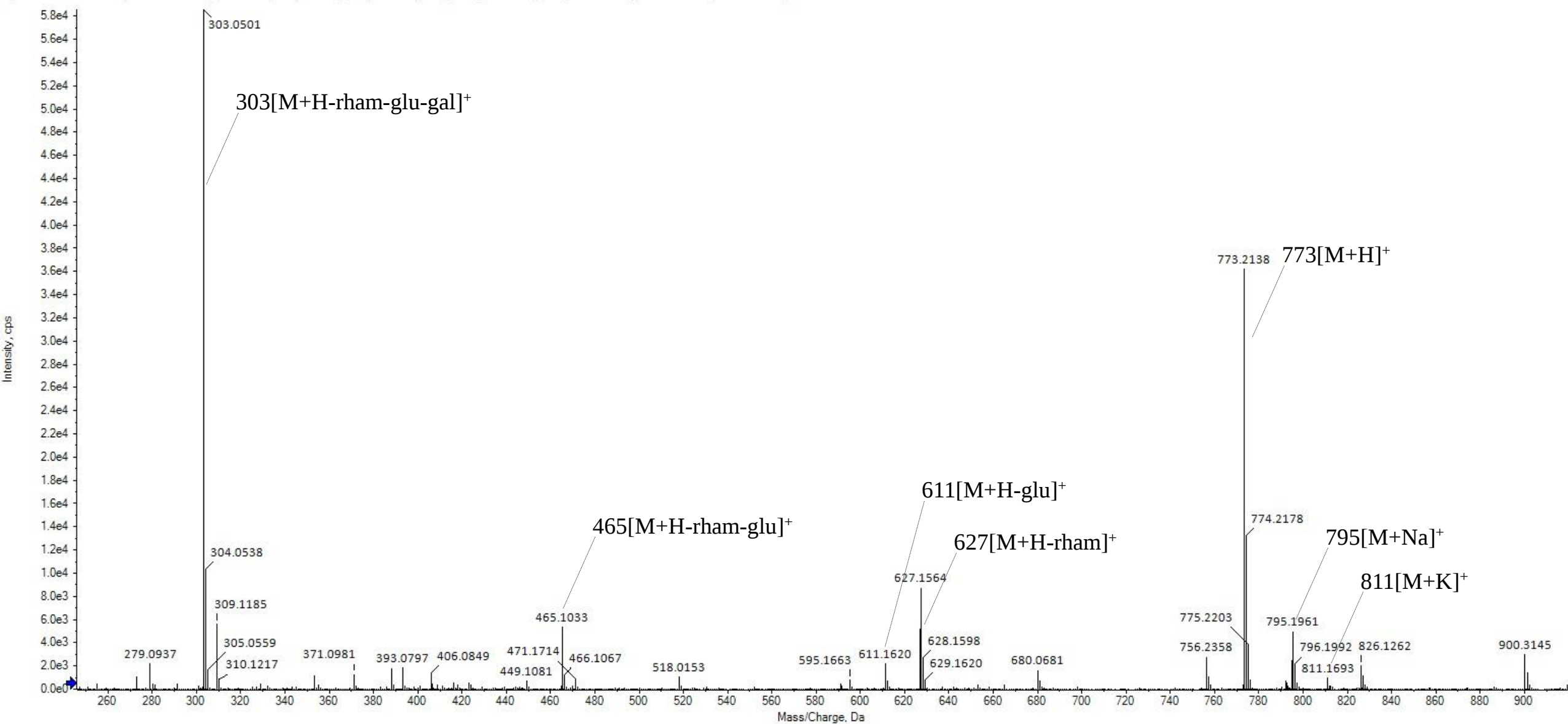
Peak 2_Q 3-O-(2,6-di-O-glu)glu (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 11.755 to 11.838 min]



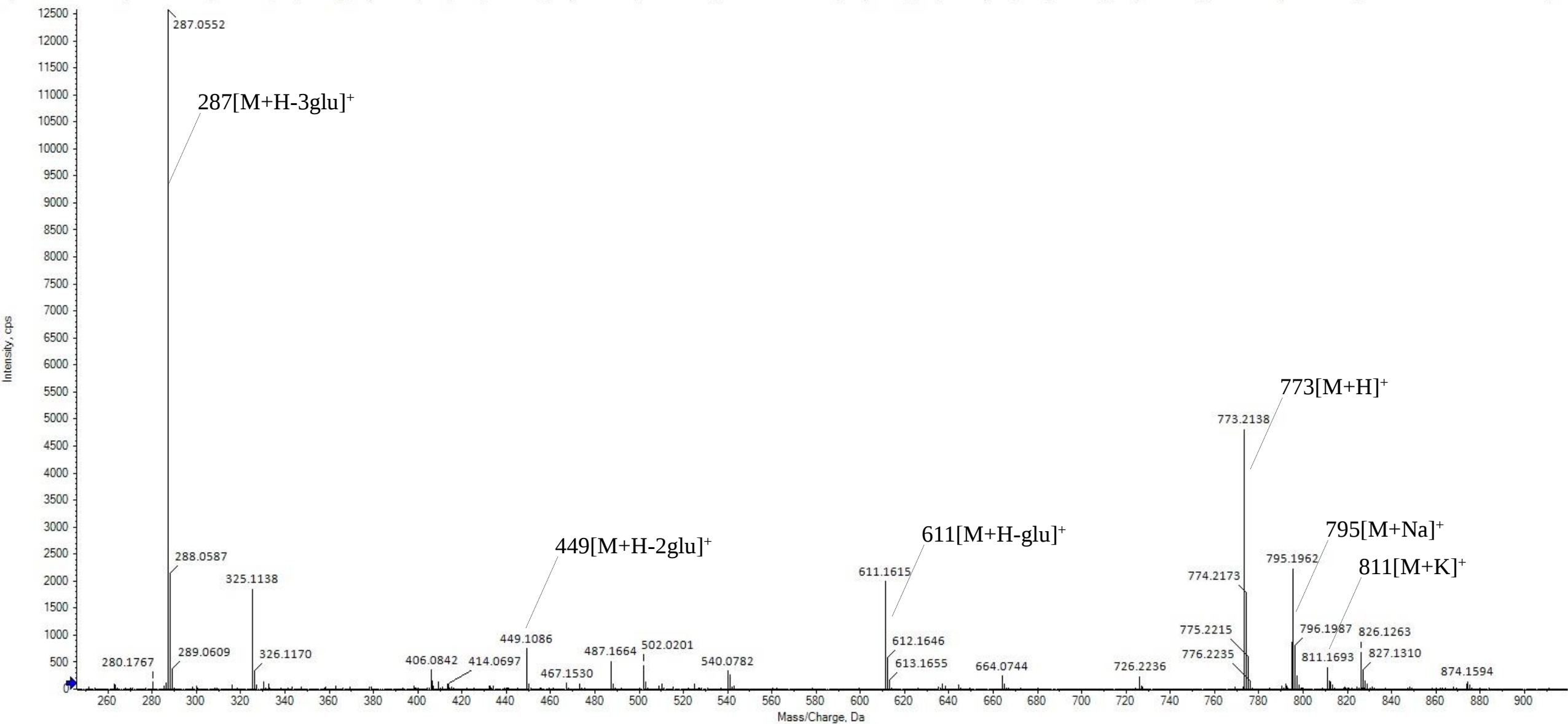
Peak 3_Q 3-O-(2-O-rham-6-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 12.957 to 13.054 min



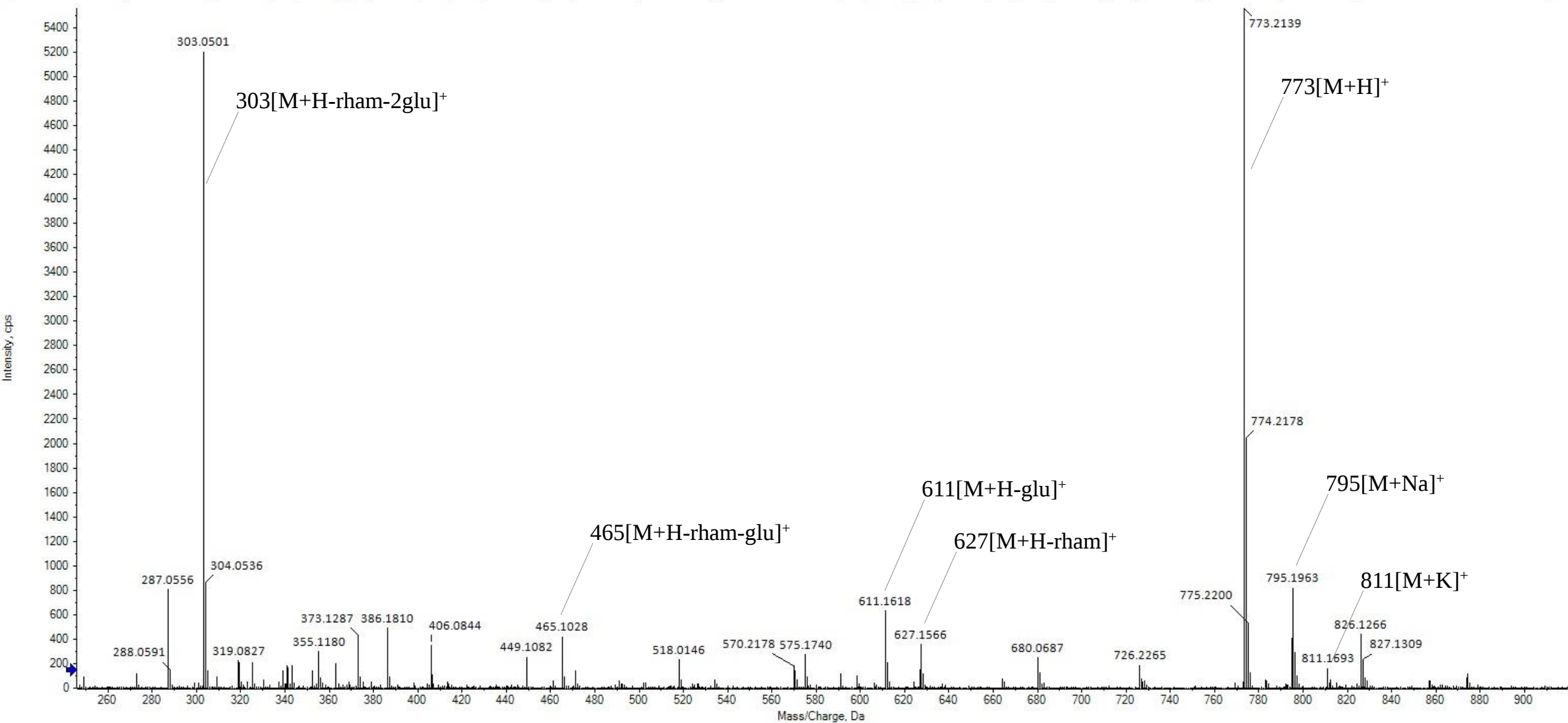
Peak 4_K 3-O-(2,6-di-O-glu)glu (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 13.239 to 13.317 min]



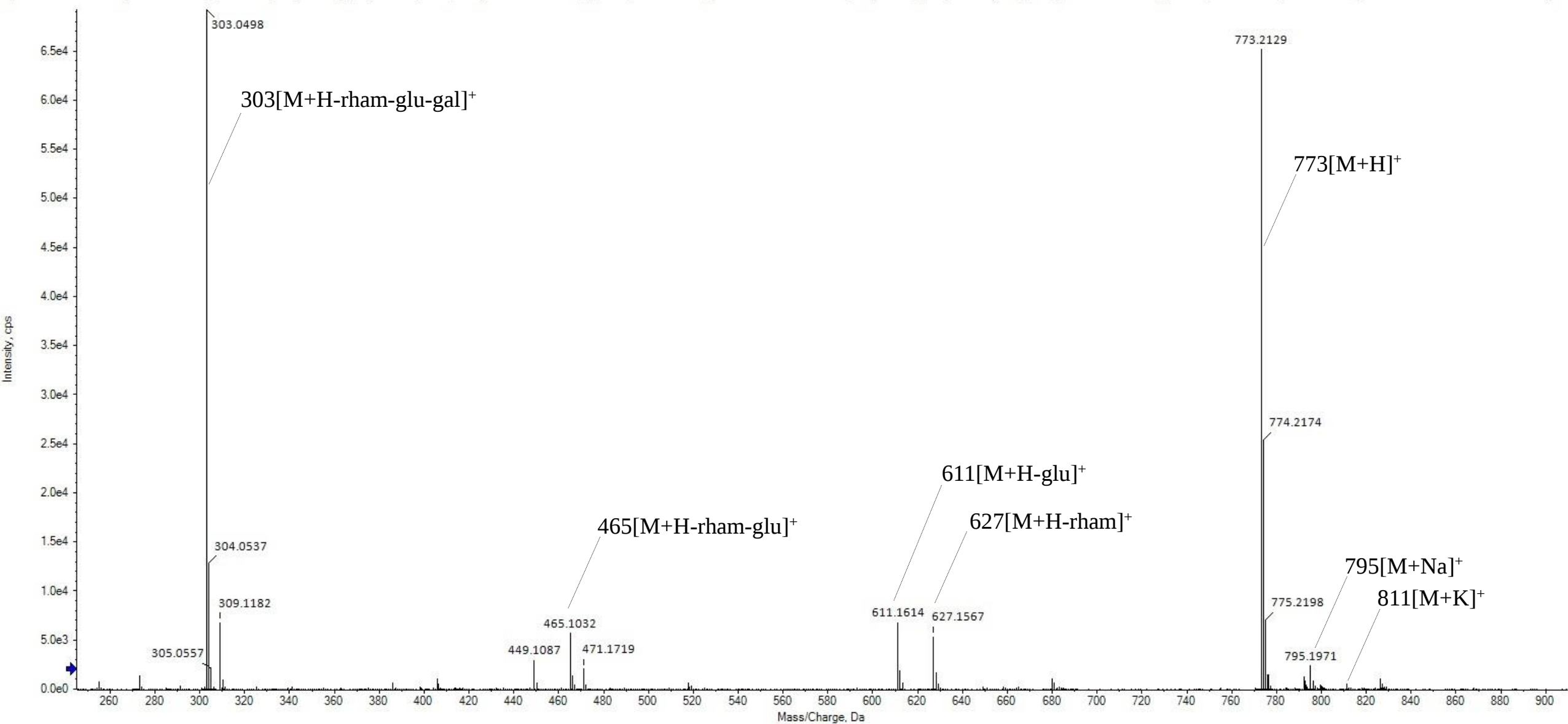
Peak 5_Q 3-O-(2-O-rham-6-O-glu)glu (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 13.239 to 13.327 min]



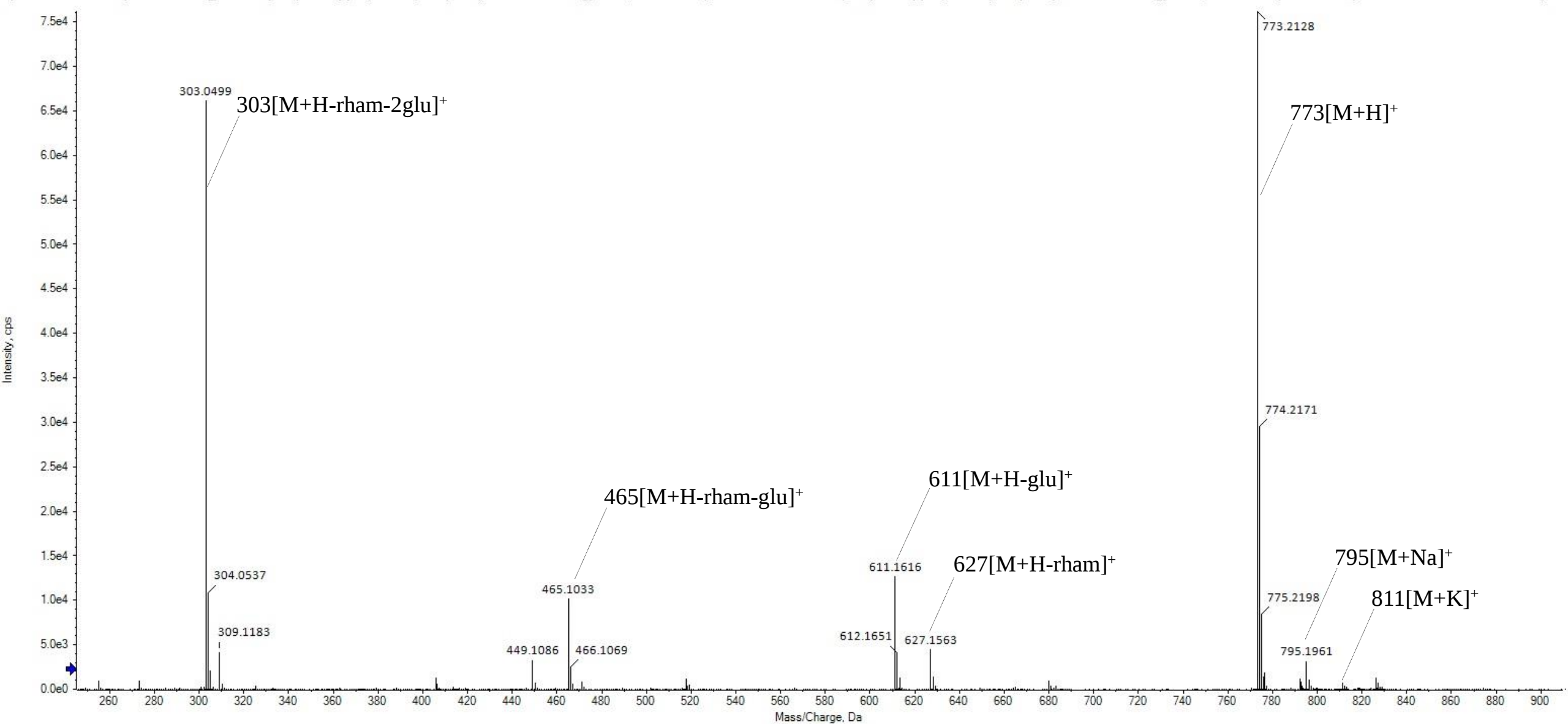
Peak 6_Q 3-O-(2-O-glu-6-O-rham)gal (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 13.405 to 13.437 min]



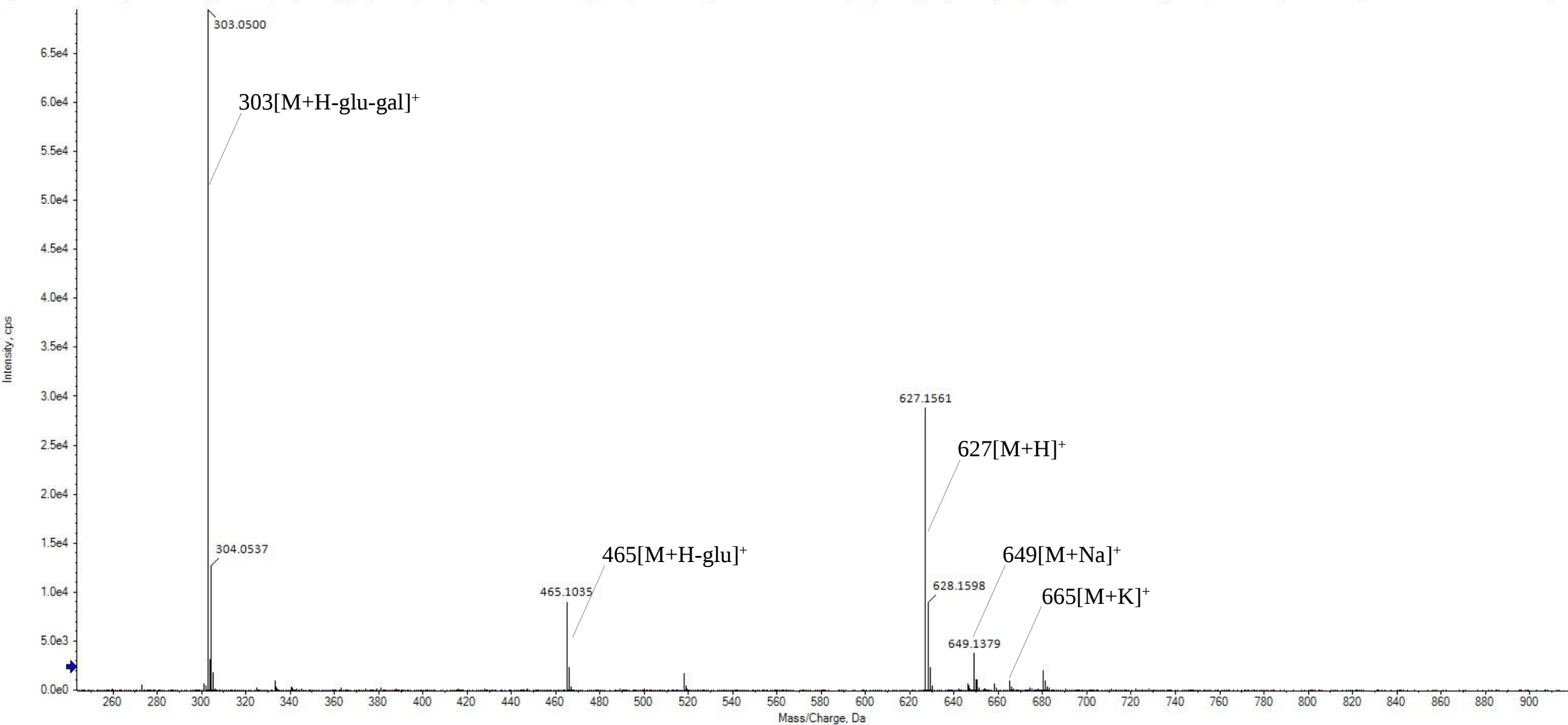
Peak 7_Q 3-O-(2-O-glu-6-O-rham)glu (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 13.636 to 13.692 min]



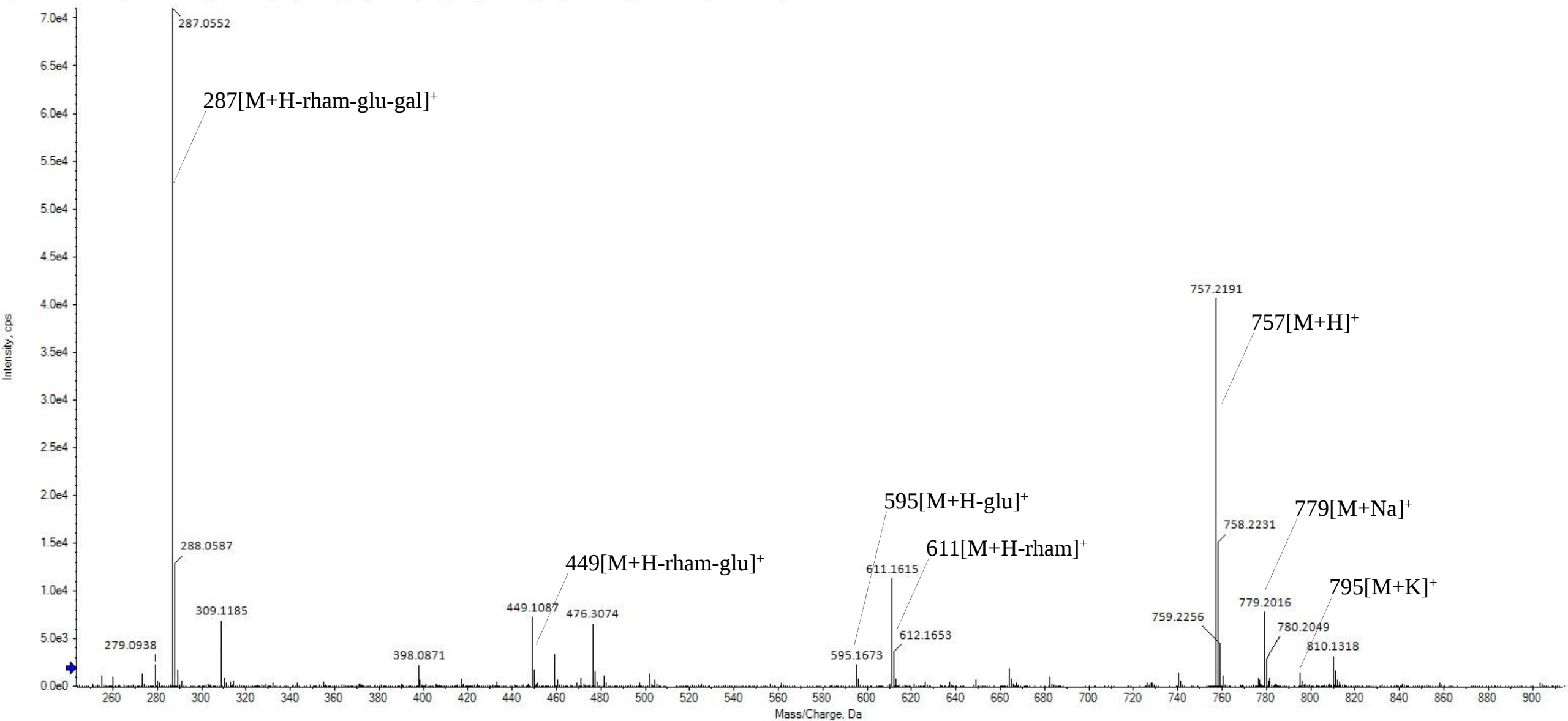
Peak 8_Q 3-O-(2-O-glu)gal (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 14.242 to 14.297 min]



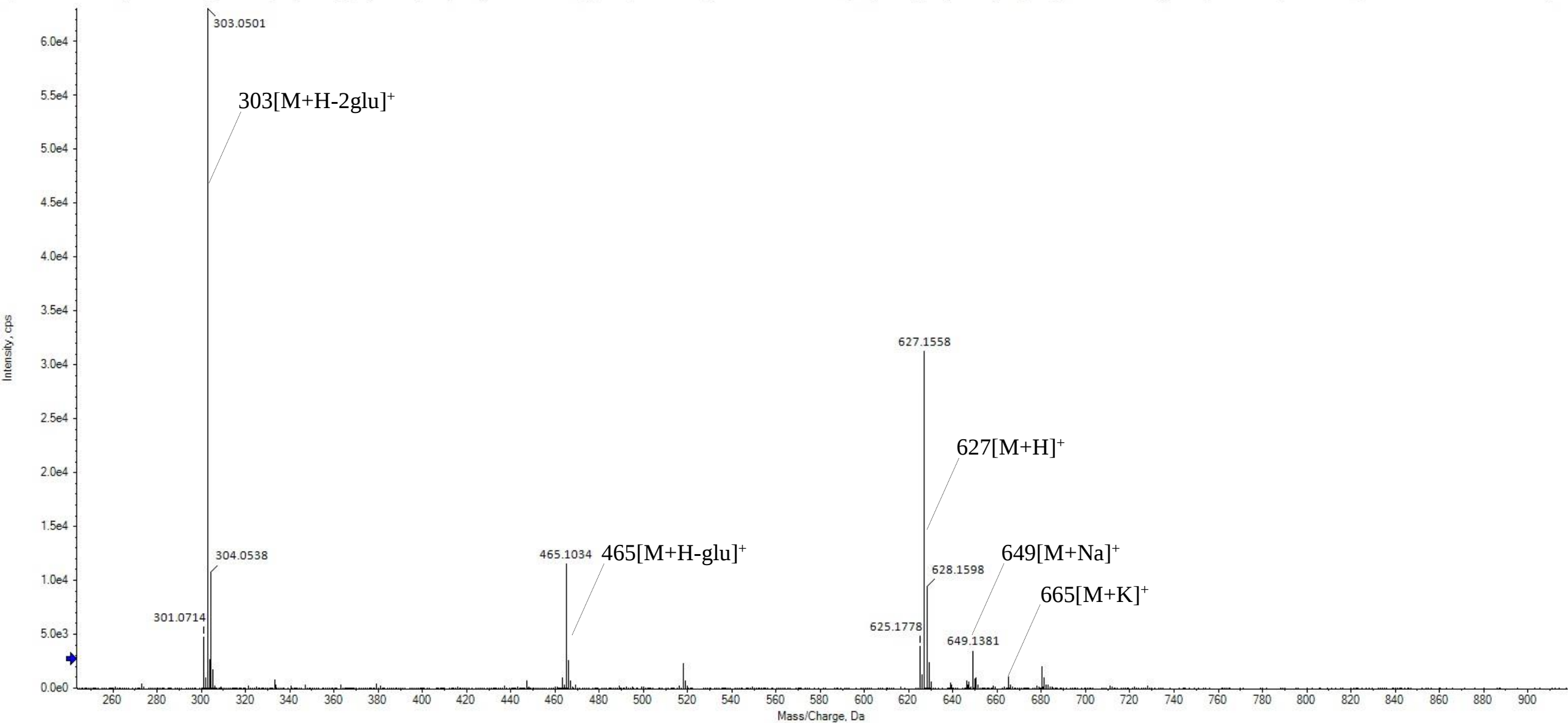
Peak 10_K 3-O-(2-O-rham-6-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 14.399 to 14.464 min



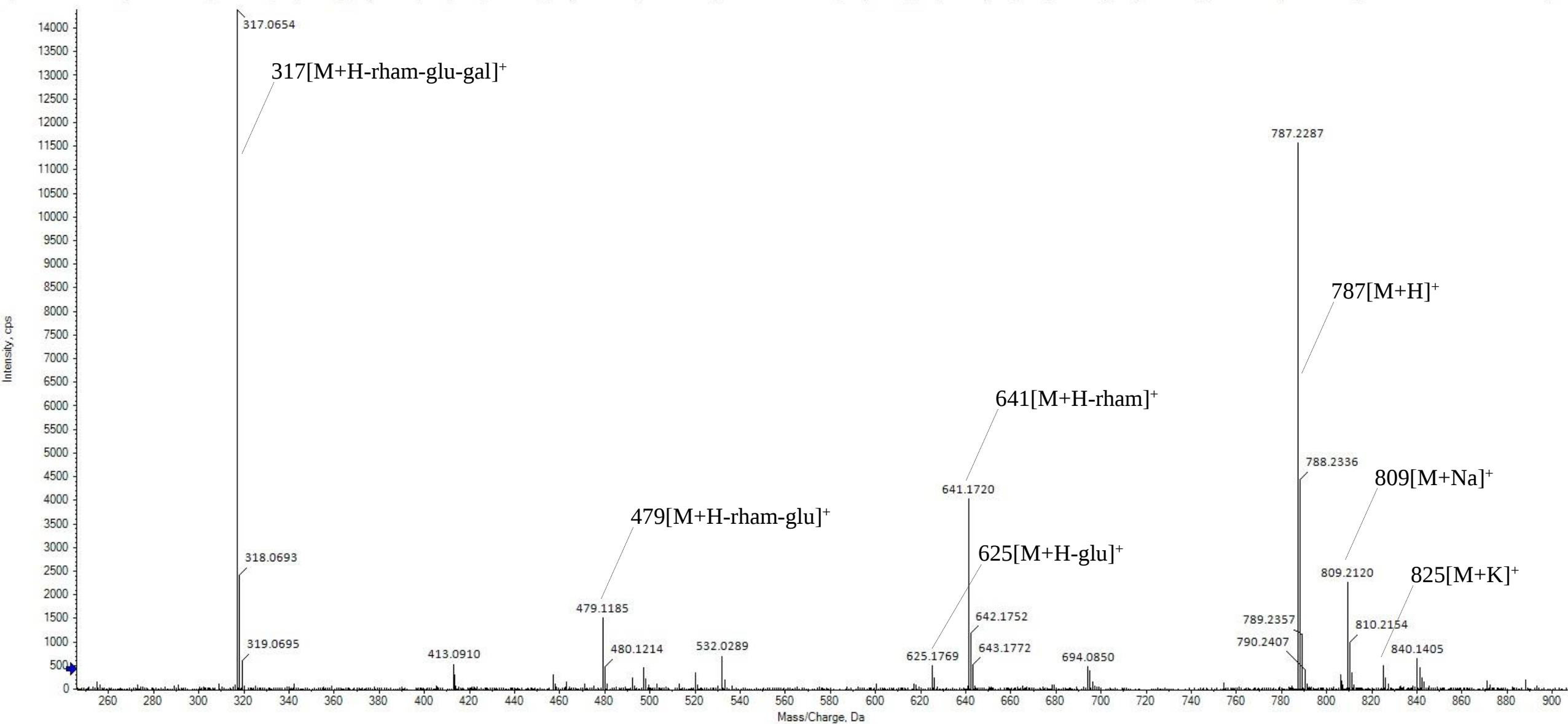
Peak 11_Q 3-O-(2-O-glu)glu (Q 3-O-sop) (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 14.496 to 14.561 min]



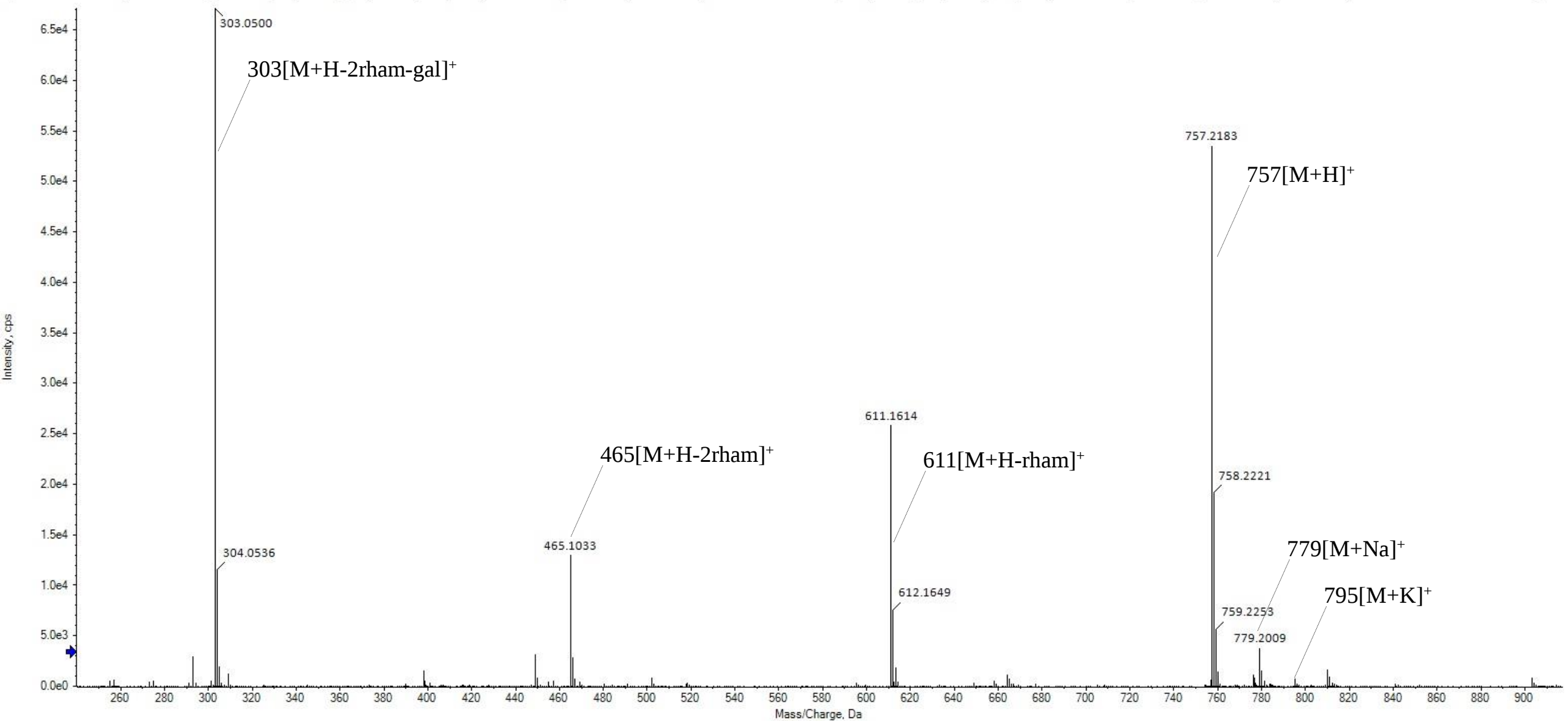
Peak 12_I 3-O-(2-O-rham-6-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 14.626 to 14.653 min]

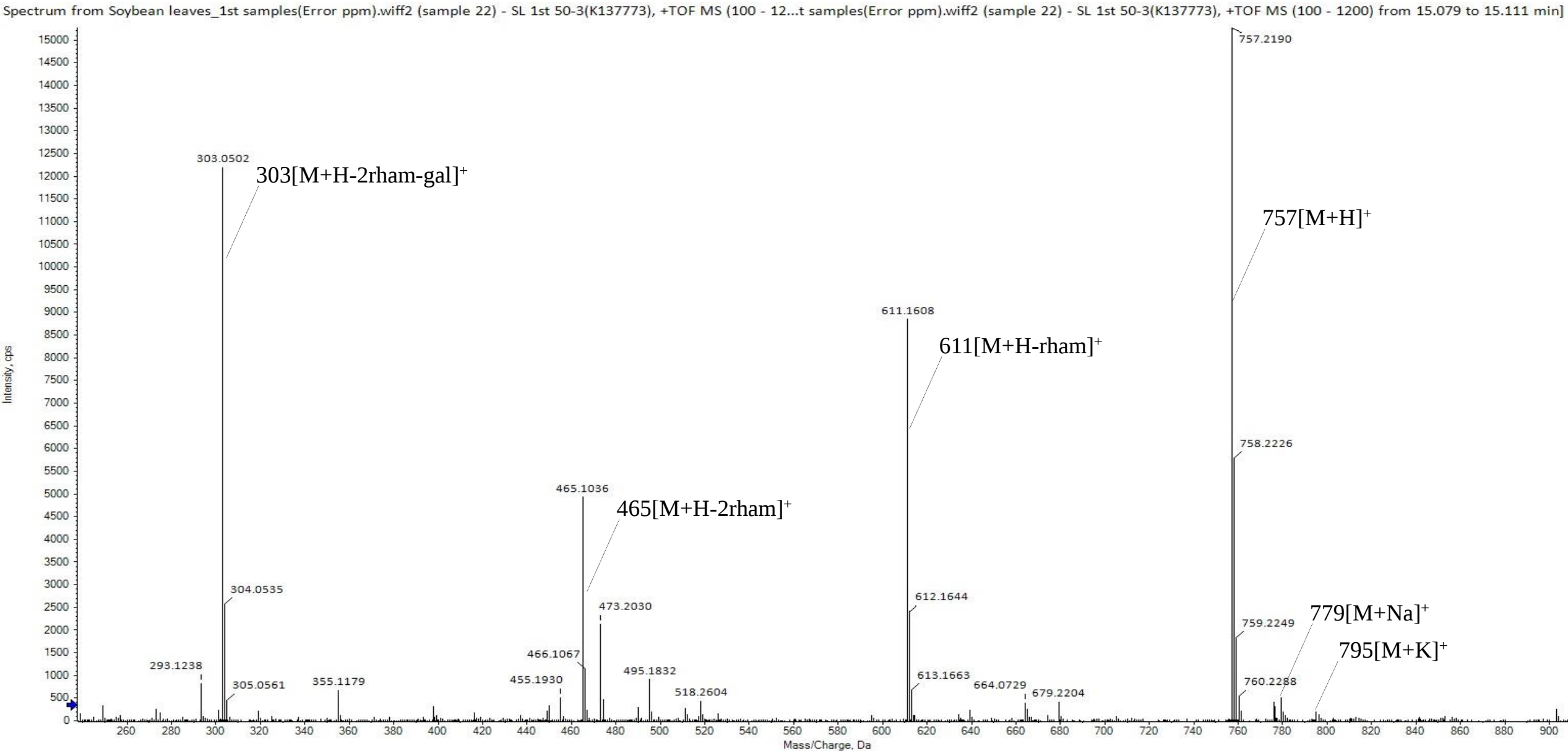


Peak 13_Q 3-O-(2,6-di-O-rham)gal (SL1)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 3) - SL 1st SinpaldalNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 3) - SL 1st SinpaldalNo2, +TOF MS (100 - 1200) from 14.630 to 14.667 min]

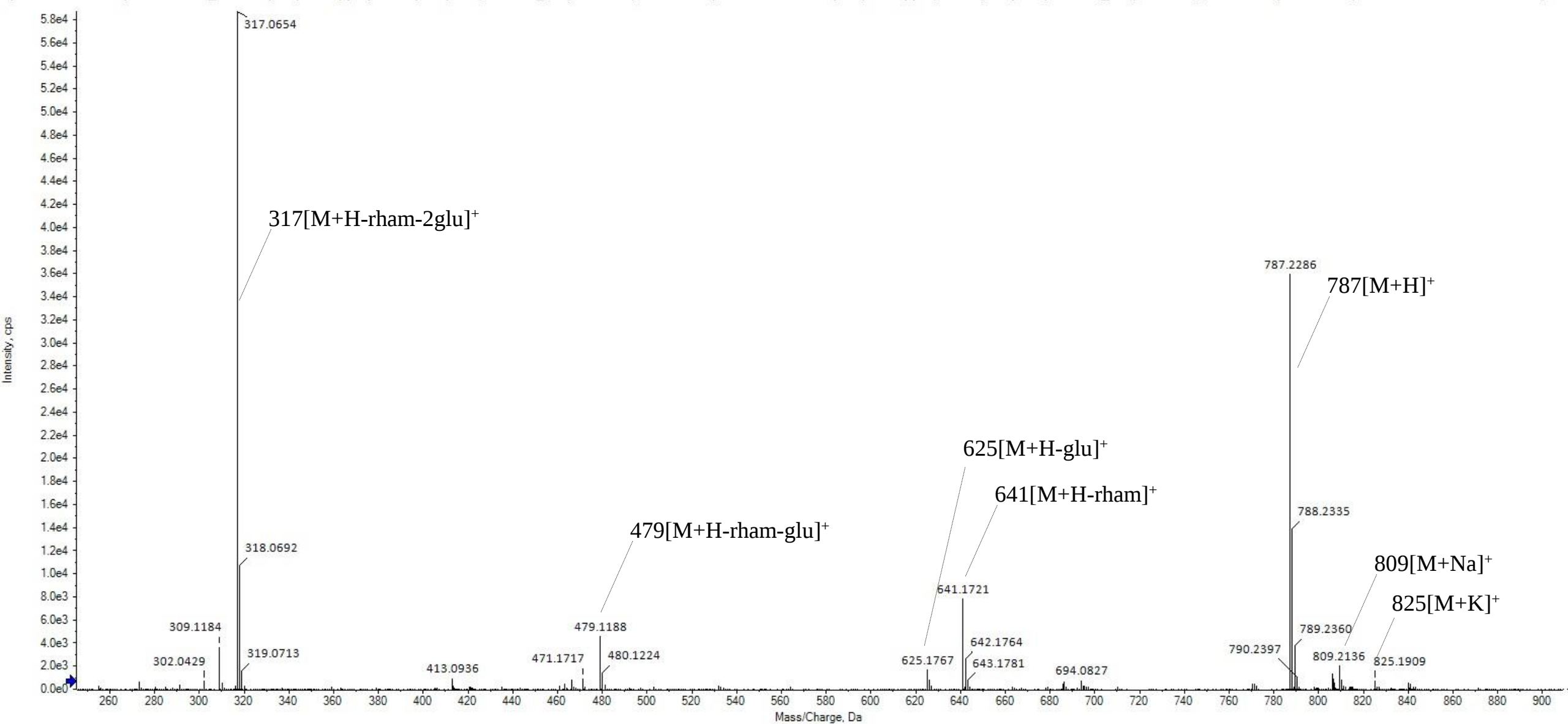


Peak 14_Q 3-O-(4,6-di-O-rham)gal (SL20)



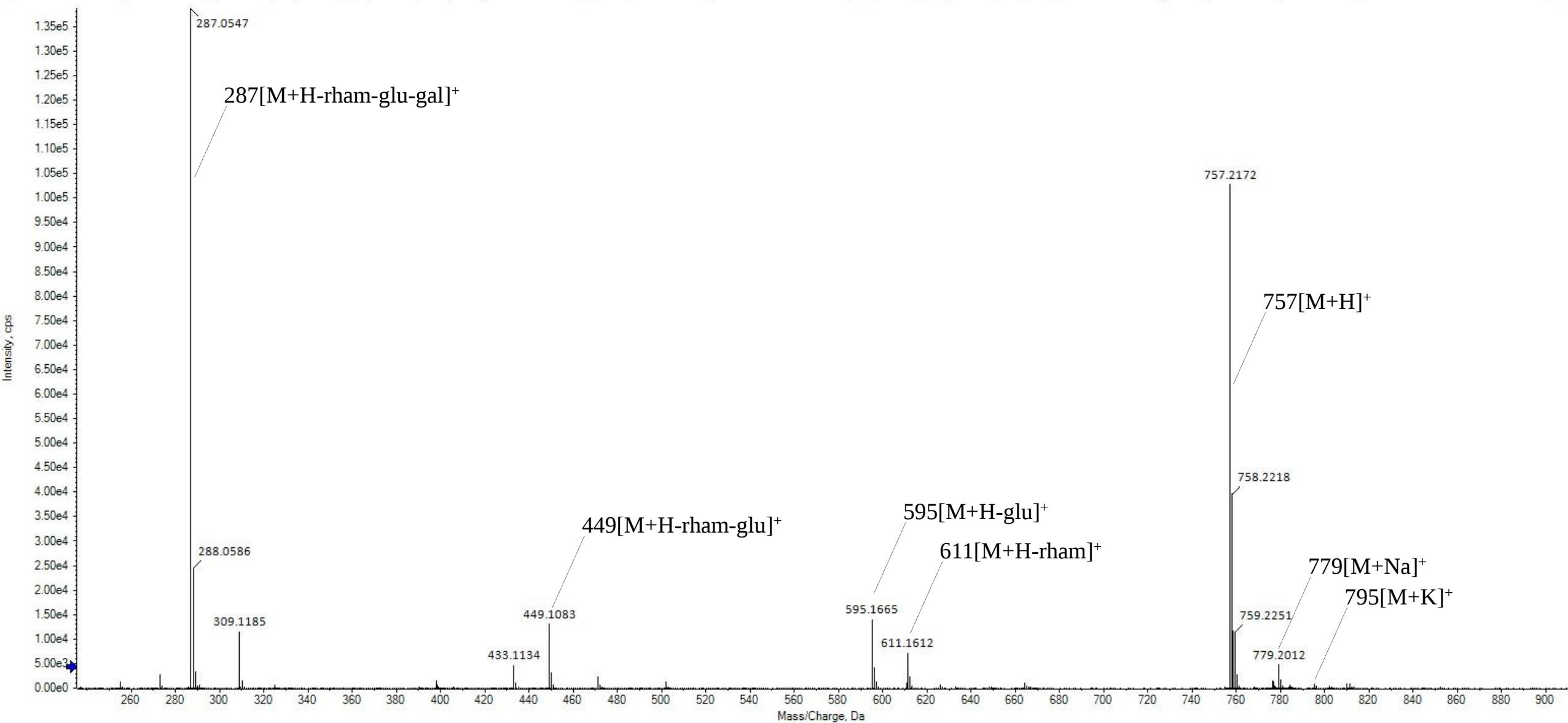
Peak 15_I 3-O-(2-O-rham-6-O-glu)glu (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 14.921 to 14.949 min]



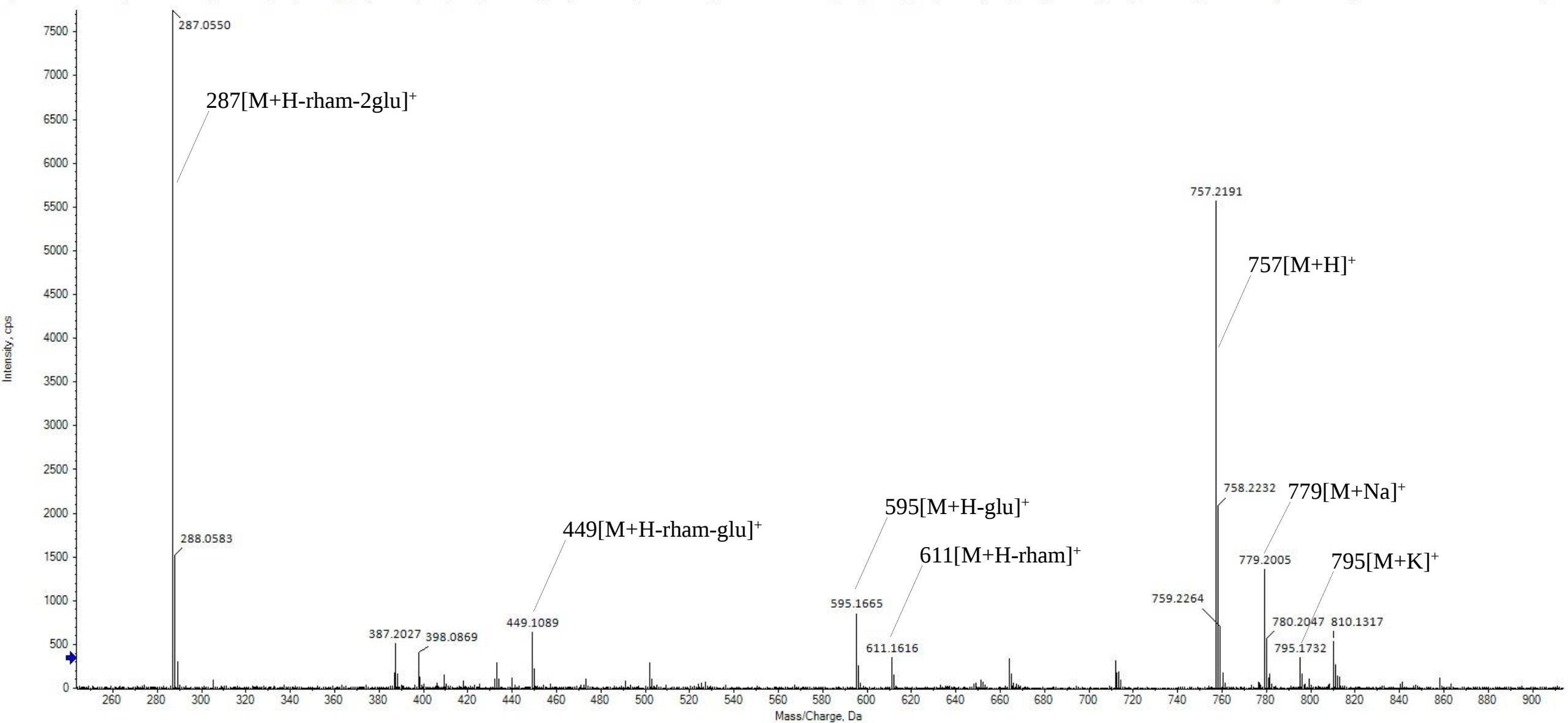
Peak 16_K 3-O-(2-O-glu-6-O-rham)gal (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 14.949 to 15.005 min]



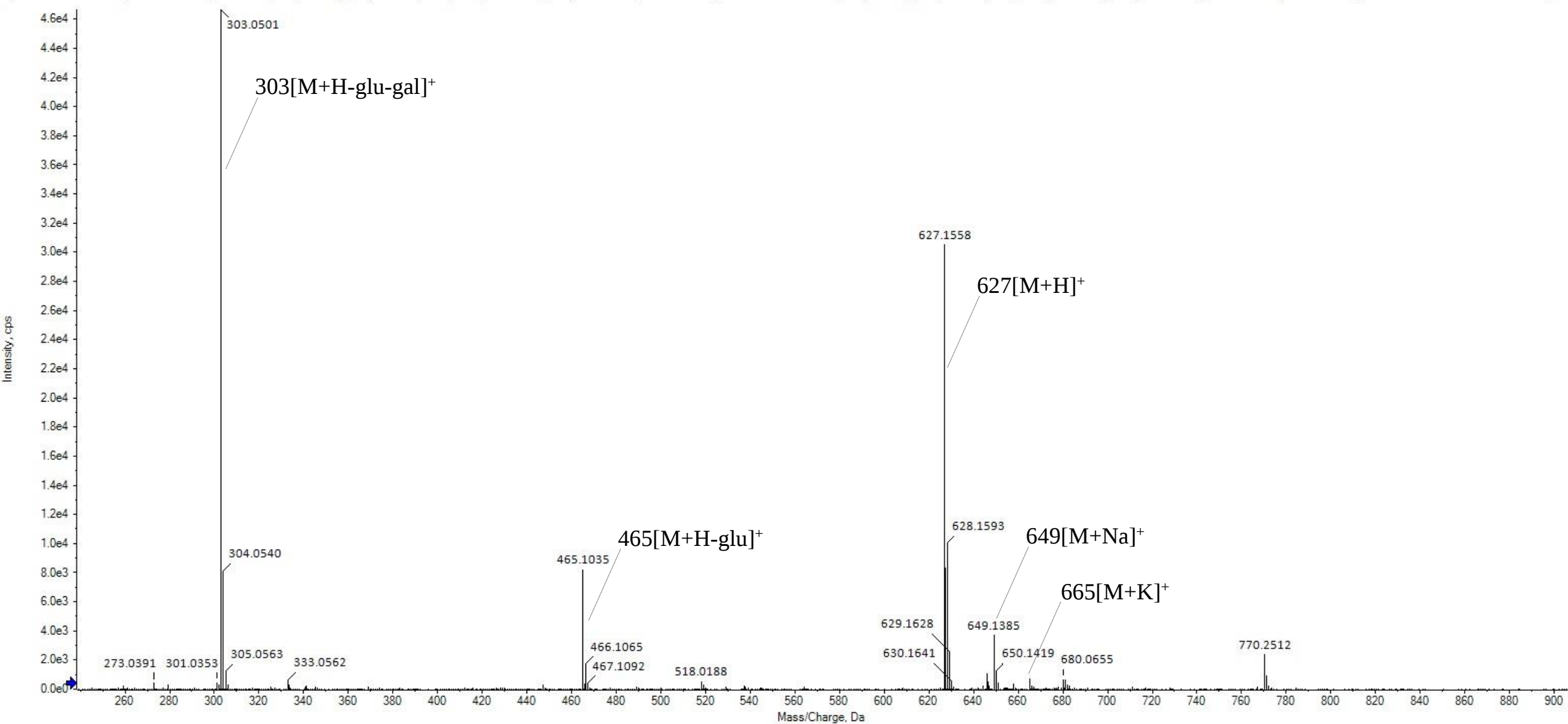
Peak 17_K 3-O-(2-O-rham-6-O-glu)glu (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 15.023 to 15.069 min]



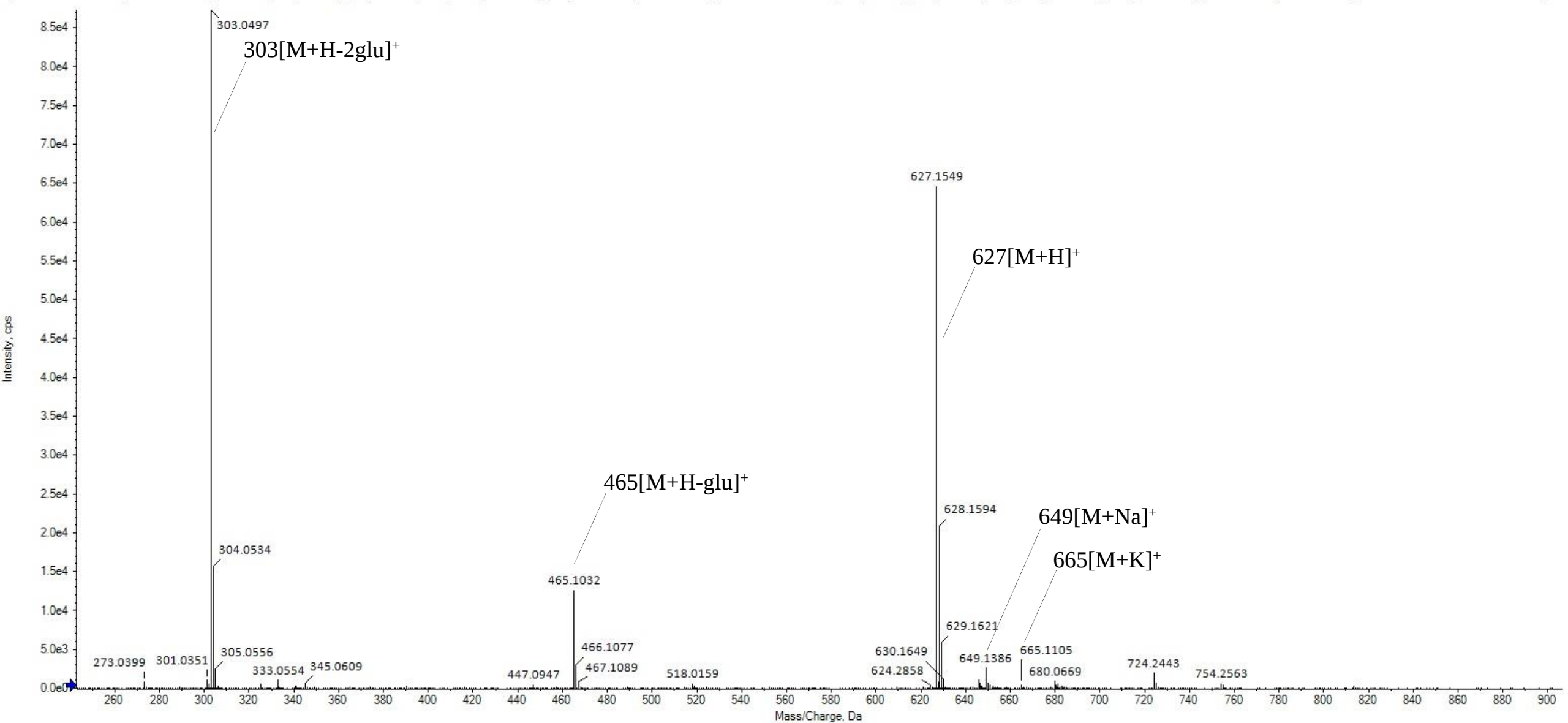
Peak 18_Q 3-O-(6-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 15.240 to 15.291 min]



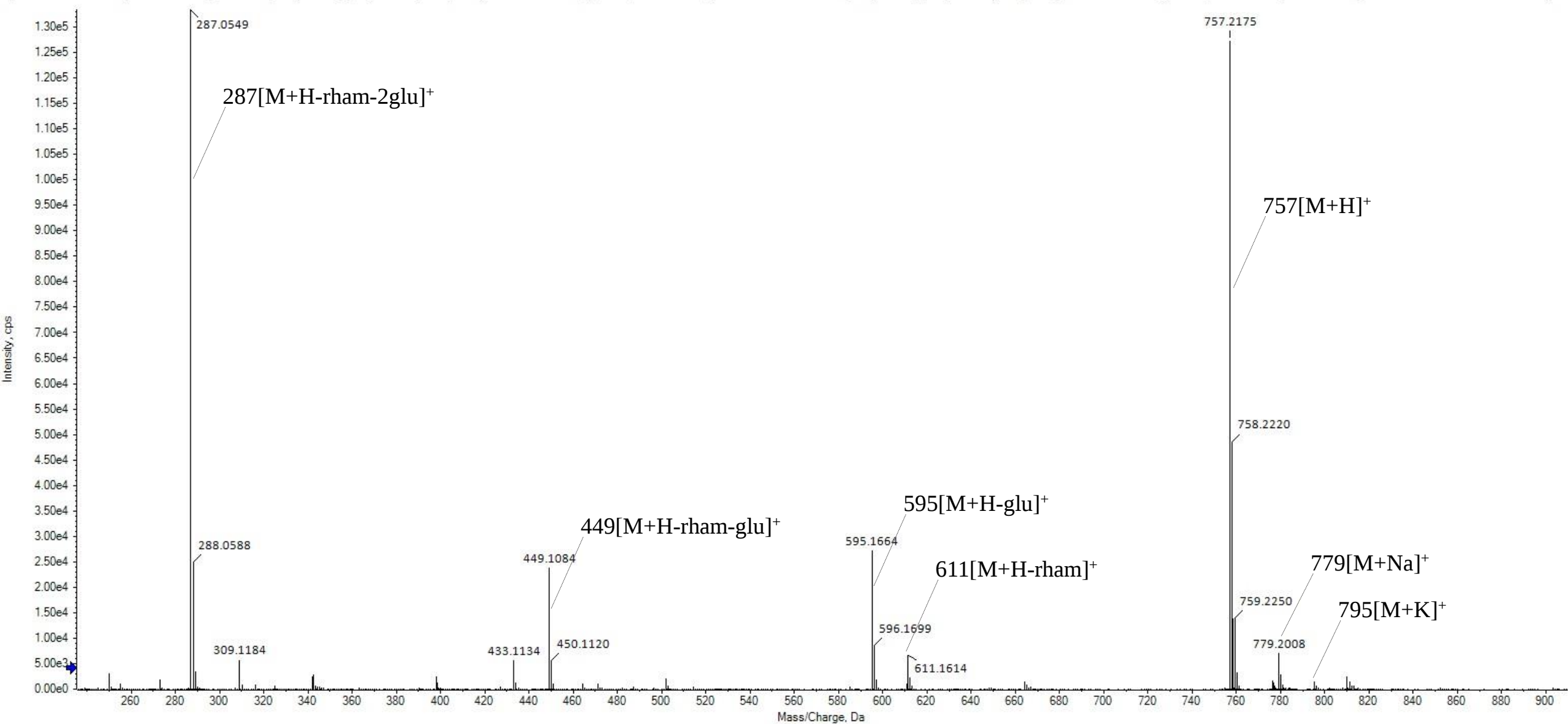
Peak 20_Q 3-O-(6-O-glu)glu (Q 3-O-gen) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 15.425 to 15.481 min]



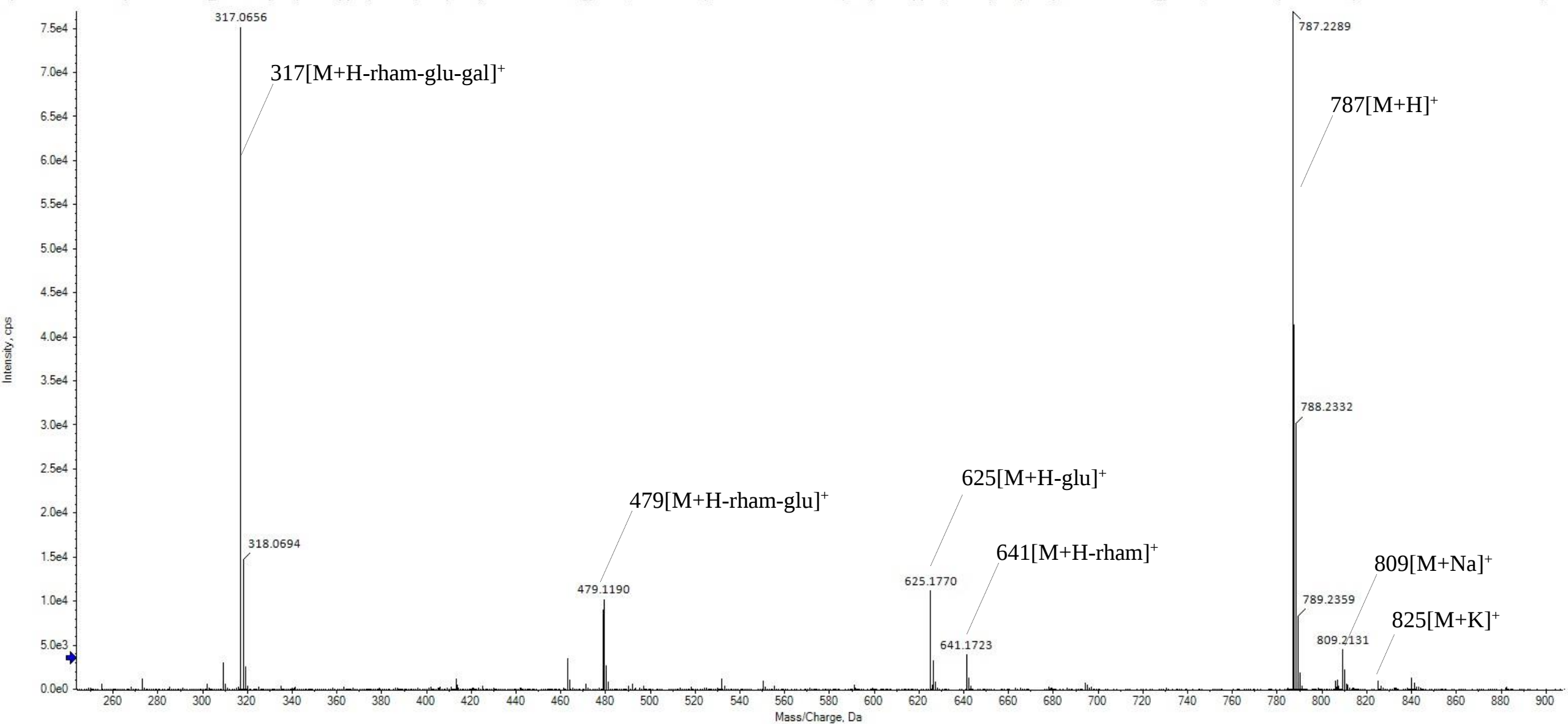
Peak 21_K 3-O-(2-O-glu-6-O-rham)glu (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 15.287 to 15.342 min]



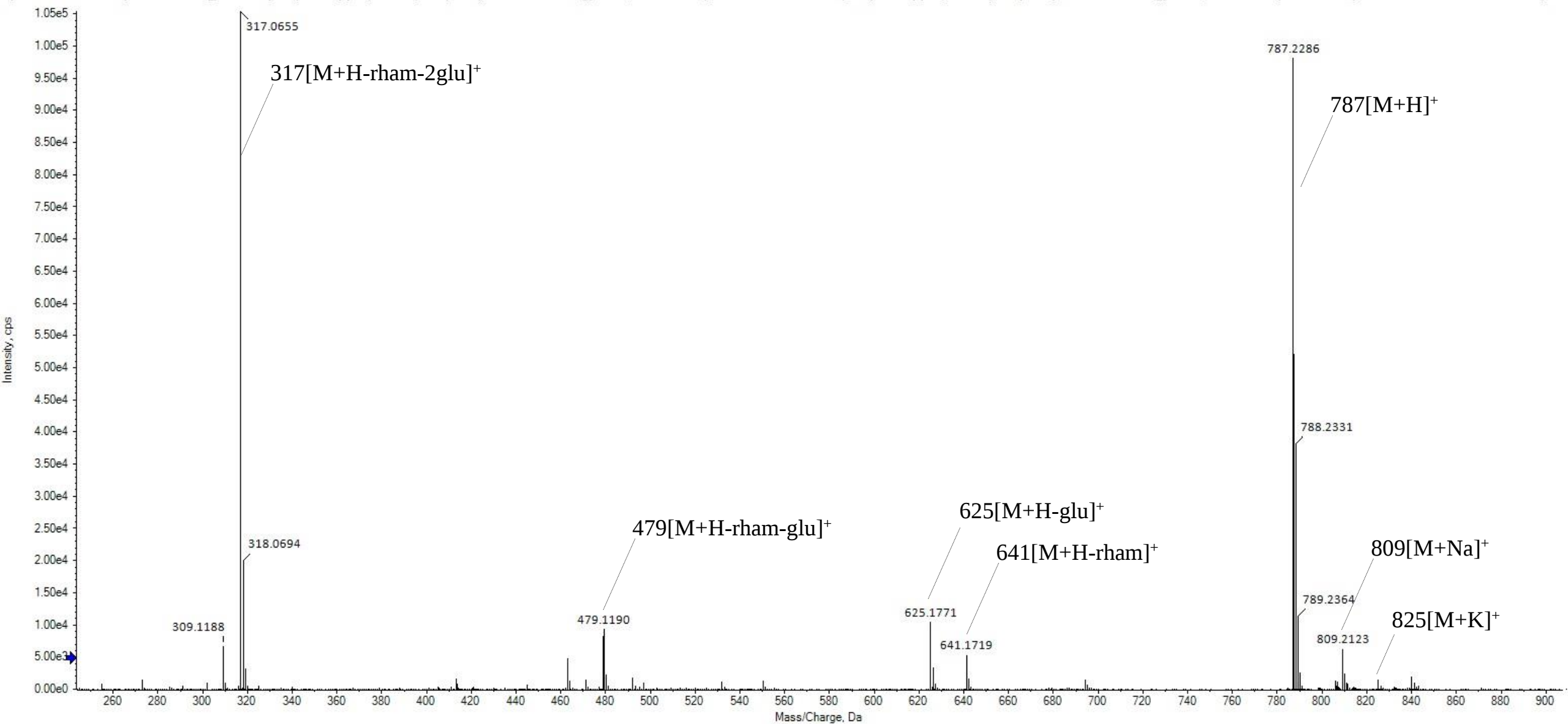
Peak 22_I 3-O-(2-O-glu-6-O-rham)gal (soyanin I) (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 15.471 to 15.532 min]



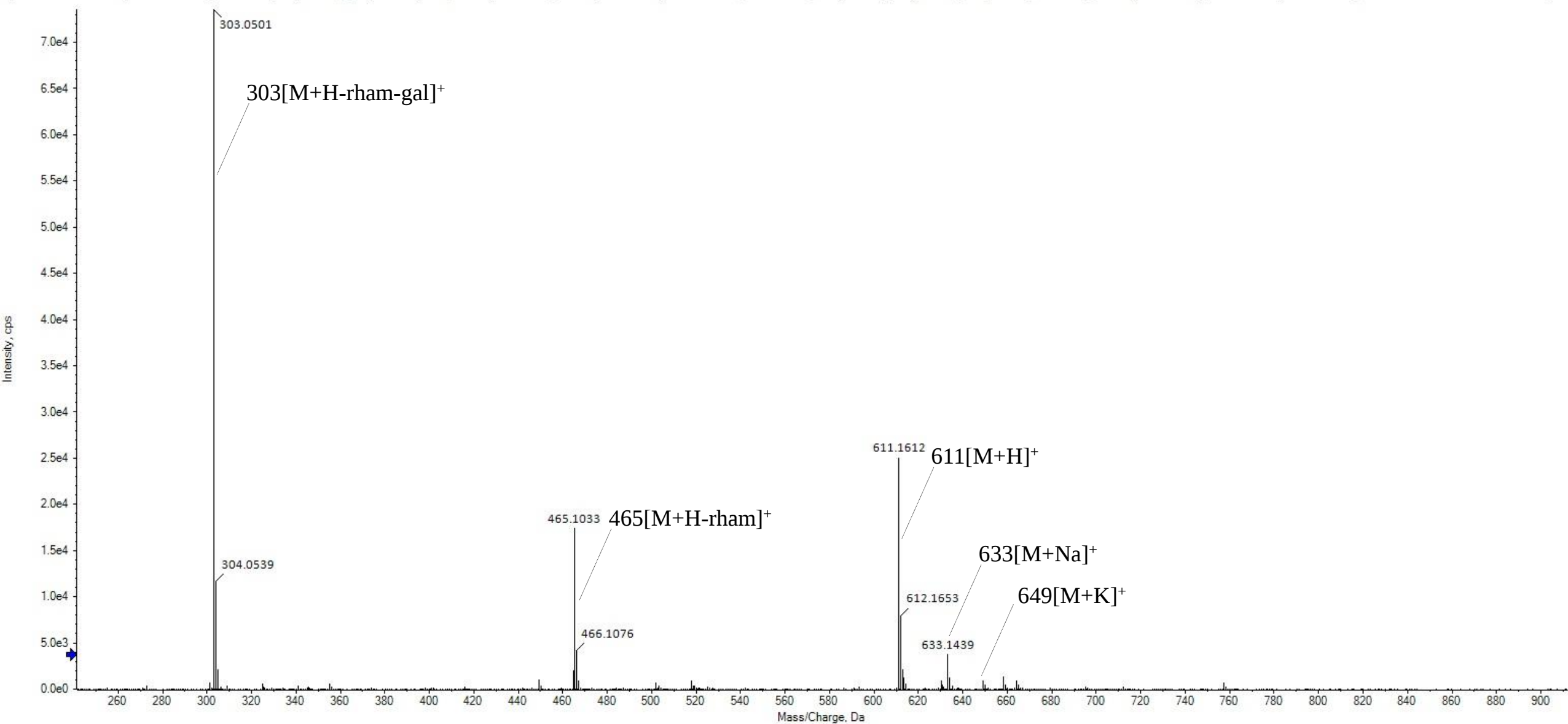
Peak 23_I 3-O-(2-O-glu-6-O-rham)glu (soyanin II) (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 15.471 to 15.532 min]

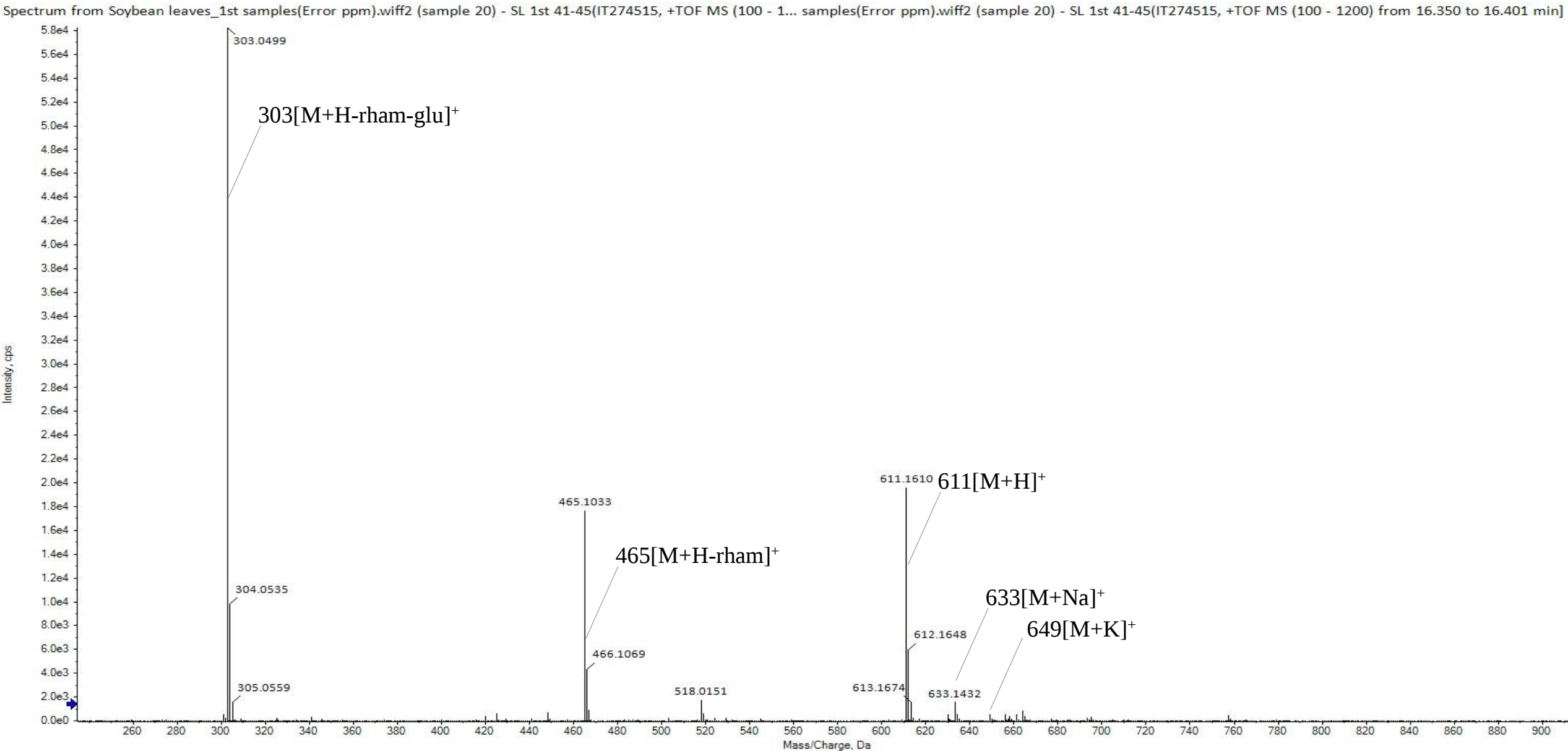


Peak 24_Q 3-O-(2-O-rham)gal (SL10)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 12) - SL 1st_10-12(IT161904), +TOF MS (100 - 1200) from 15.786 to 15.841 min]

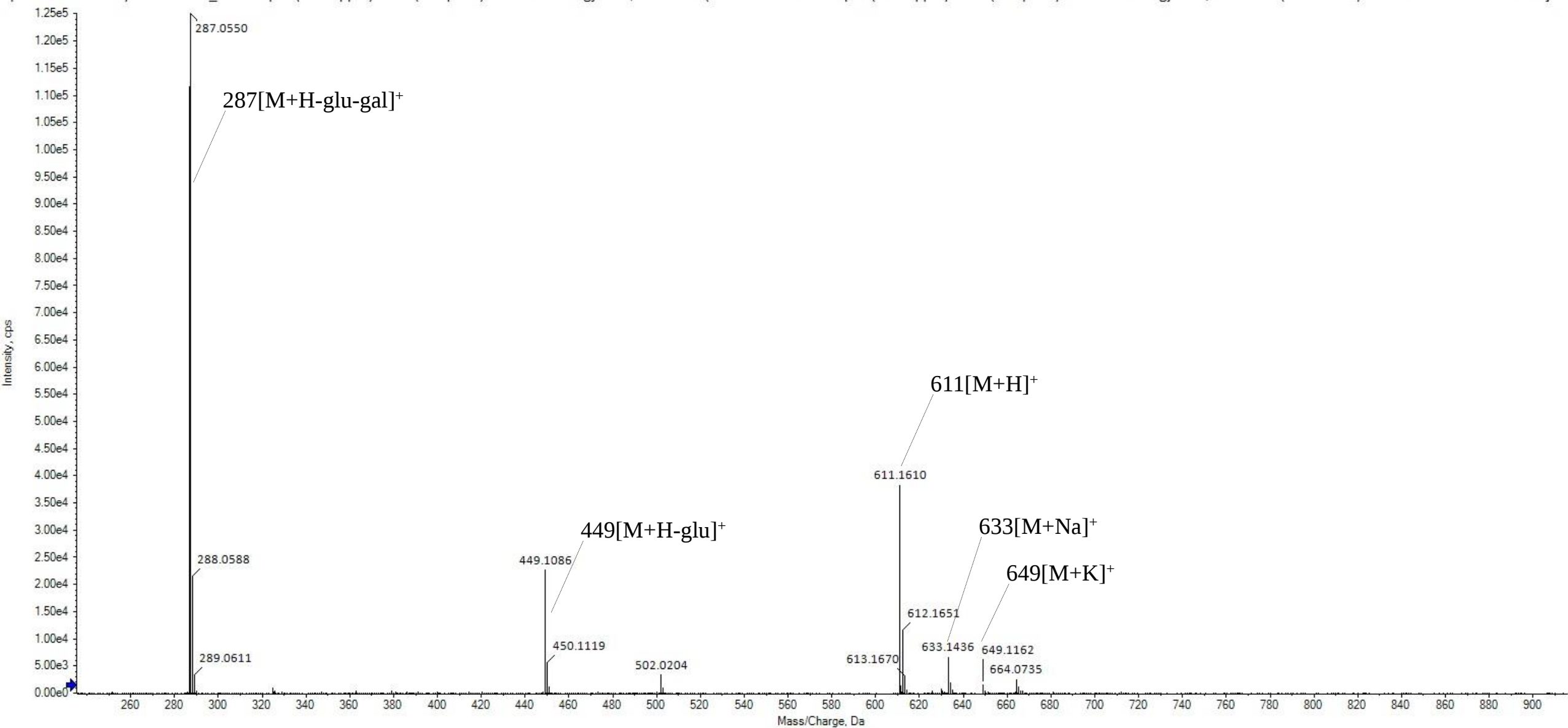


Peak 25_Q 3-O-(2-O-rham)glu (Q 3-O-neo) (SL18)



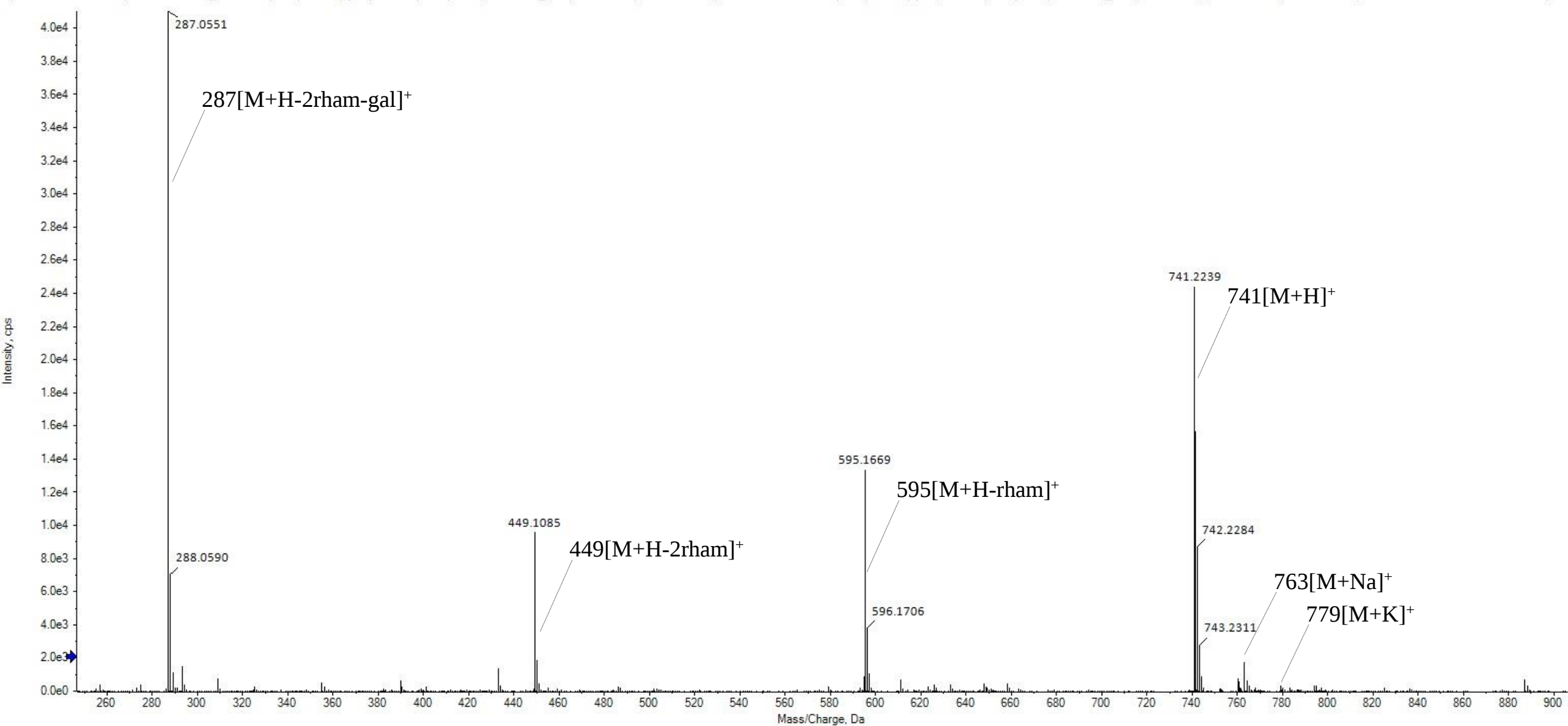
Peak 26_K 3-O-(2-O-glu)gal (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 16.239 to 16.294 min]



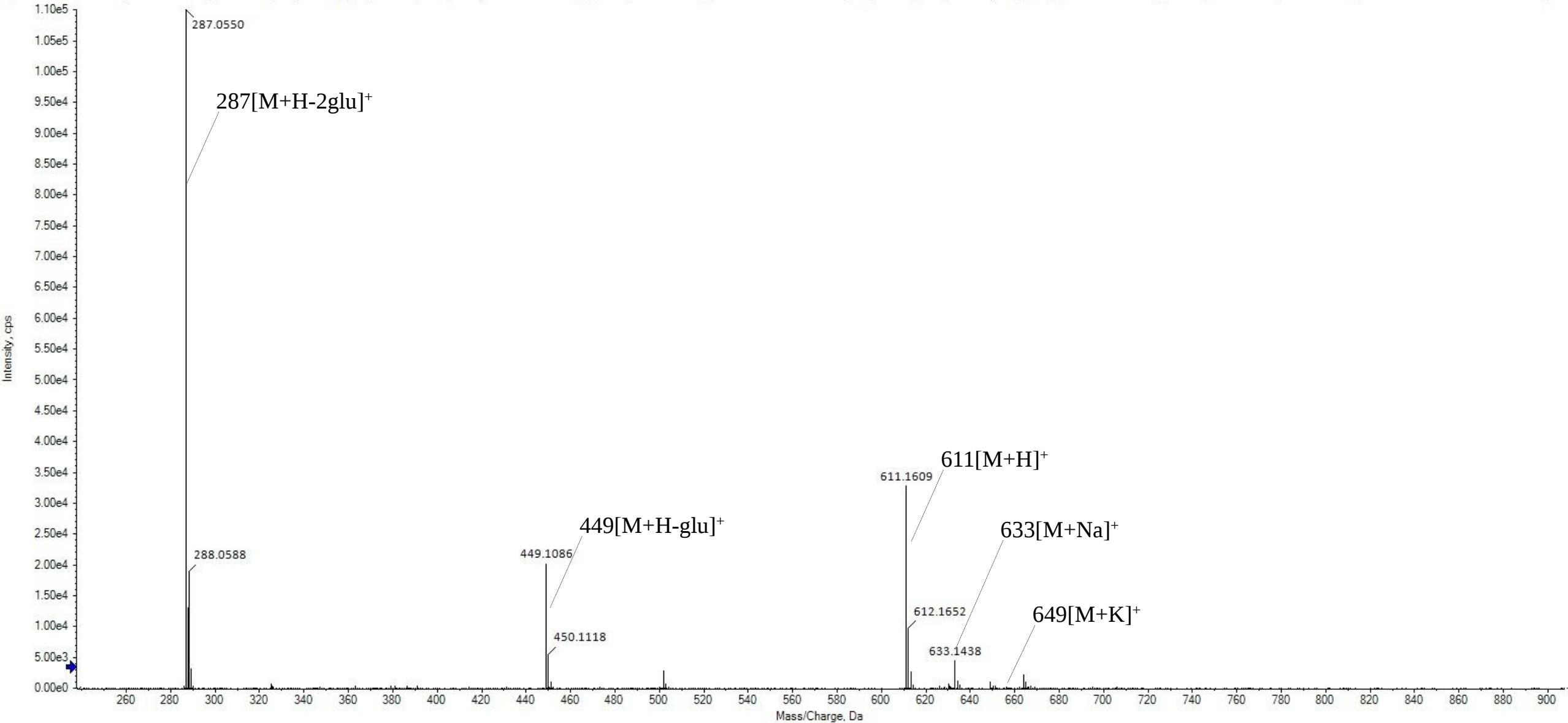
Peak 27_K 3-O-(2,6-di-O-rham)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 16.068 to 16.105 min]



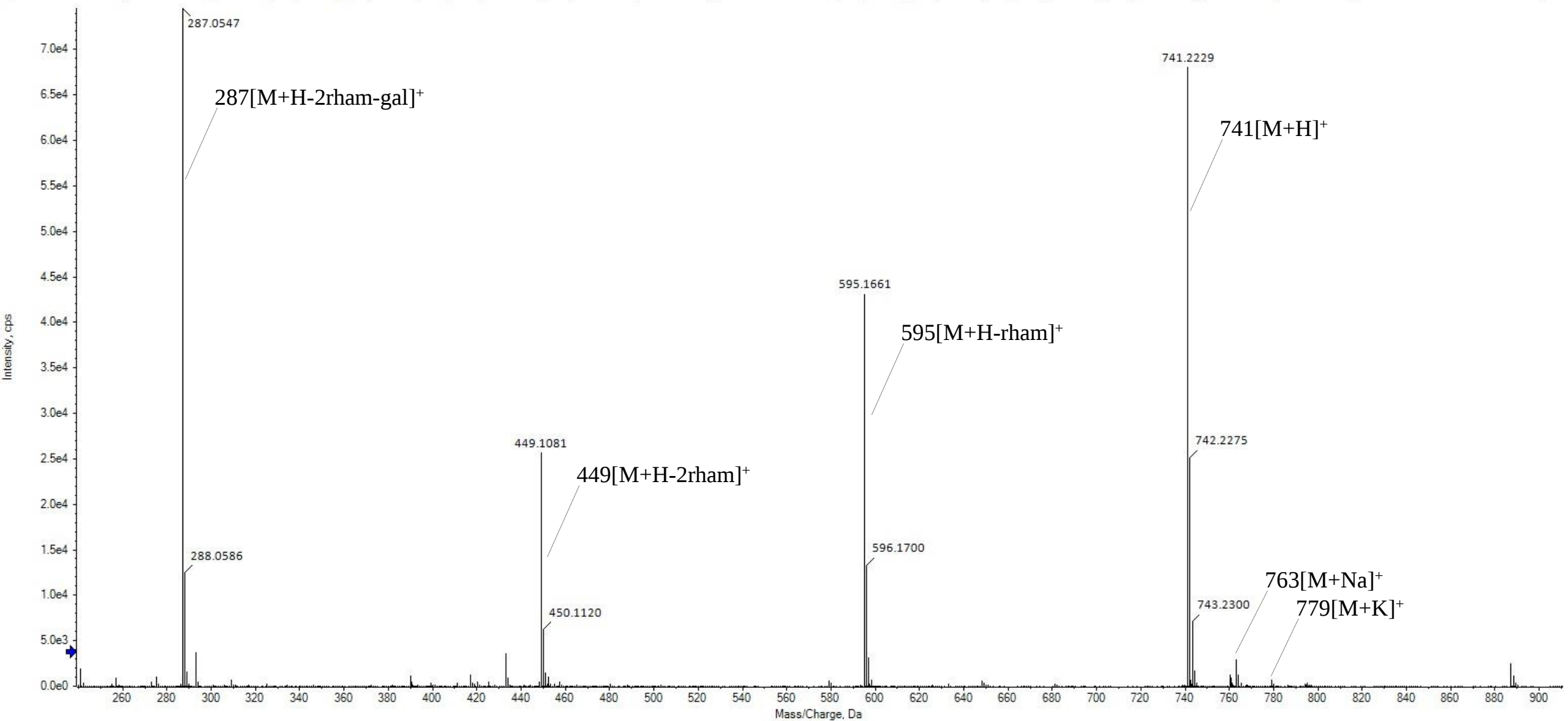
Peak 28_K 3-O-(2-O-glu)glu (K 3-O-sop) (SL3)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200...1st samples(Error ppm).wiff2 (sample 4) - SL 1st CheongjaNo2, +TOF MS (100 - 1200) from 16.202 to 16.280 min]



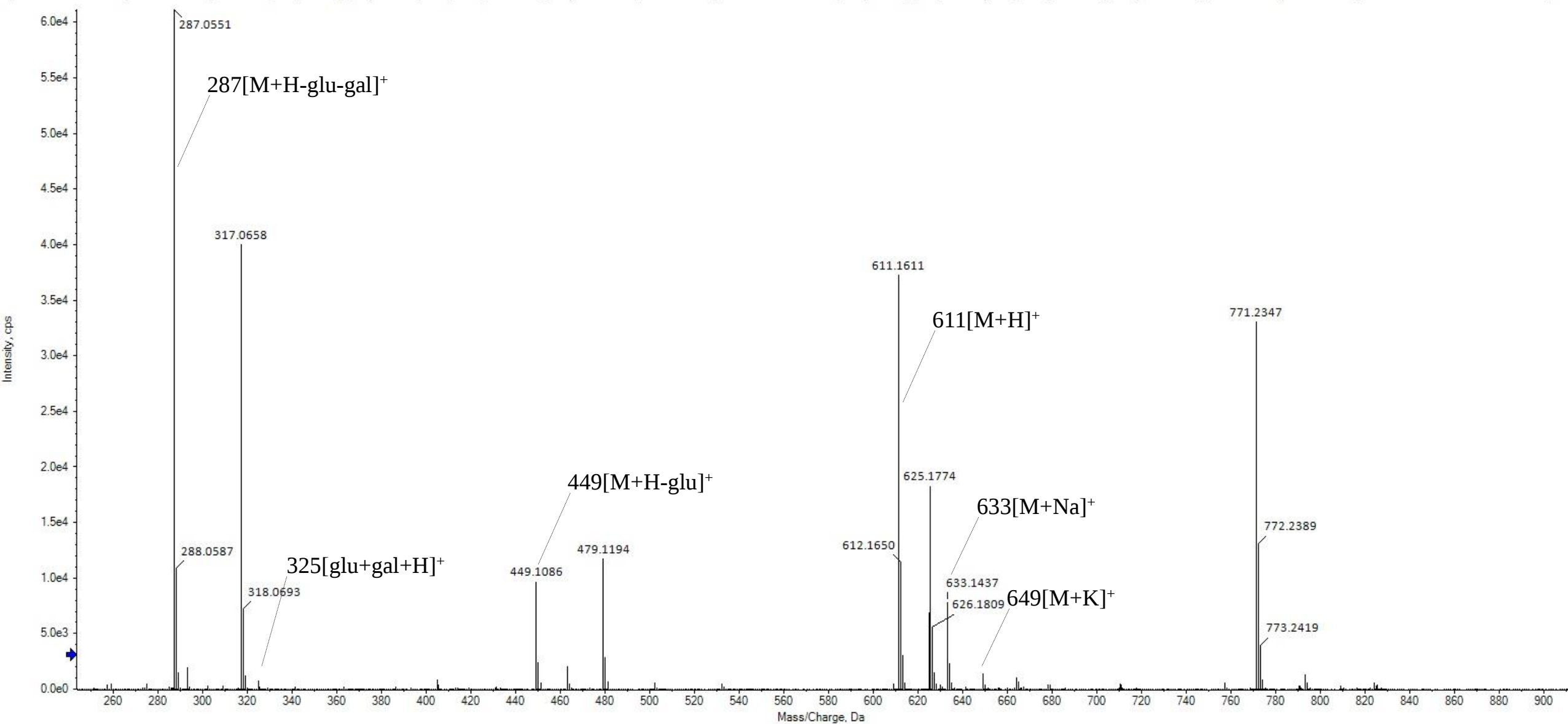
Peak 29_K 3-O-(4,6-di-O-rham)gal (SL5)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 7) - SL 1st_2-2(IT024099), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 7) - SL 1st_2-2(IT024099), +TOF MS (100 - 1200) from 16.451 to 16.493 min]



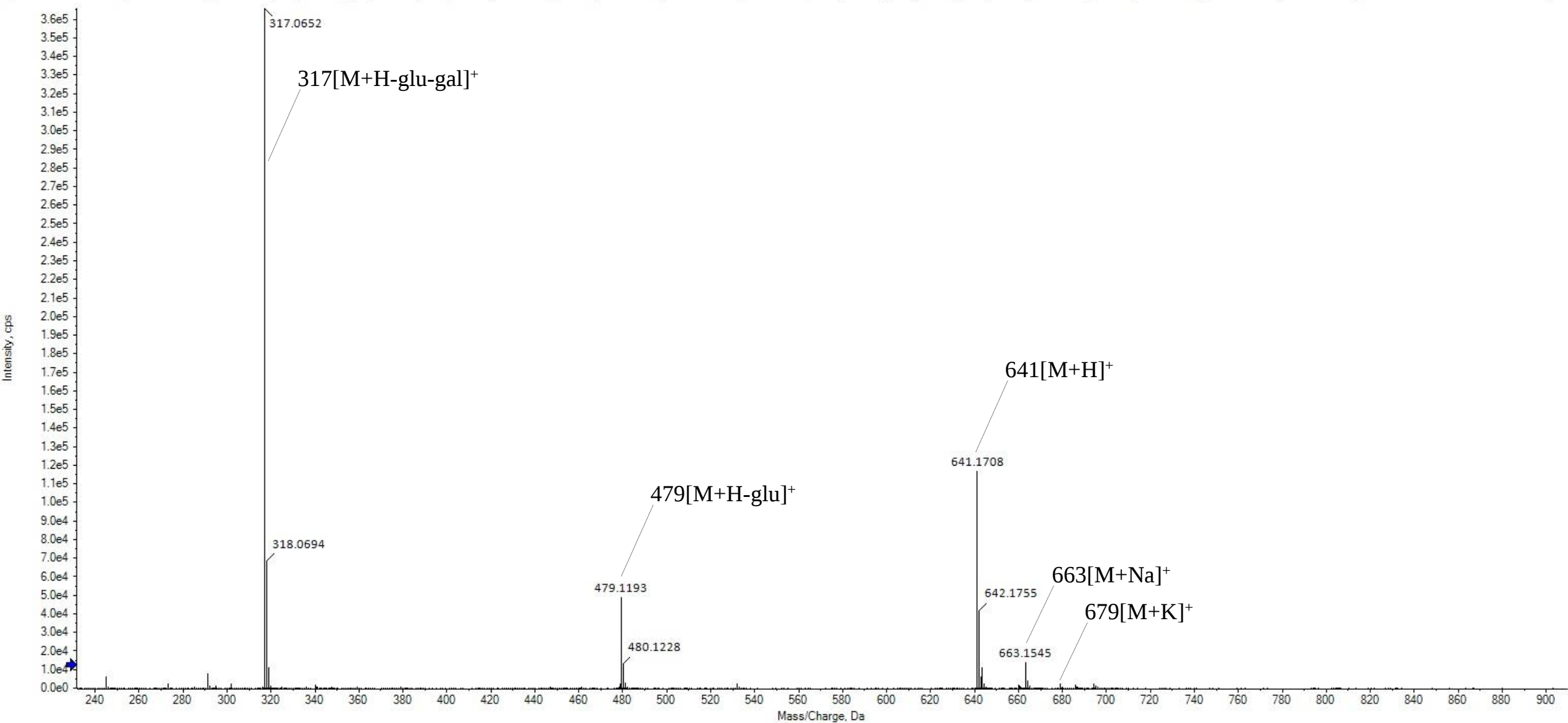
Peak 30_K 3-O-(6-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 16.636 to 16.720 min]



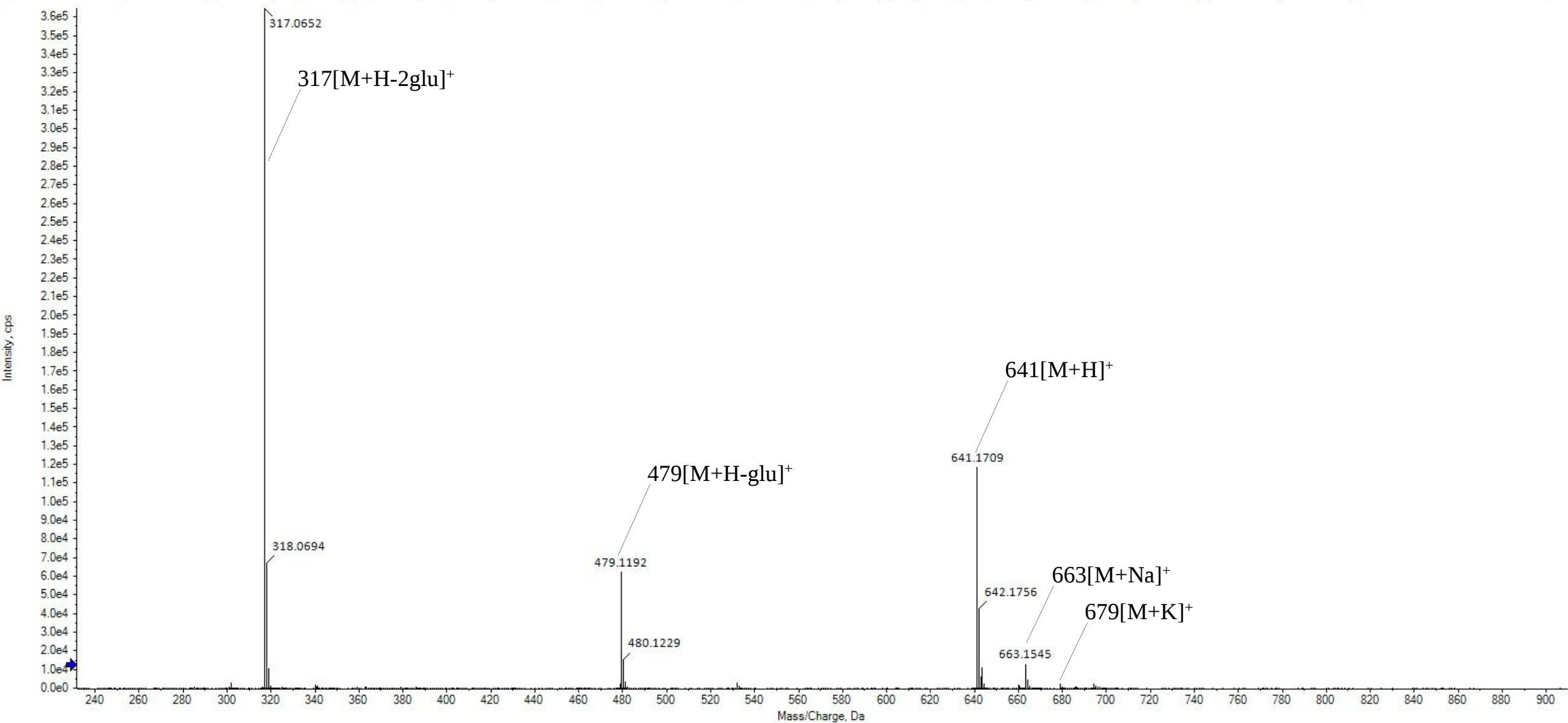
Peak 31_I 3-O-(2-O-glu)gal (SL10)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 12) - SL 1st_10-12(IT161904), +TOF MS (100 - 1200) from 16.807 to 16.881 min]



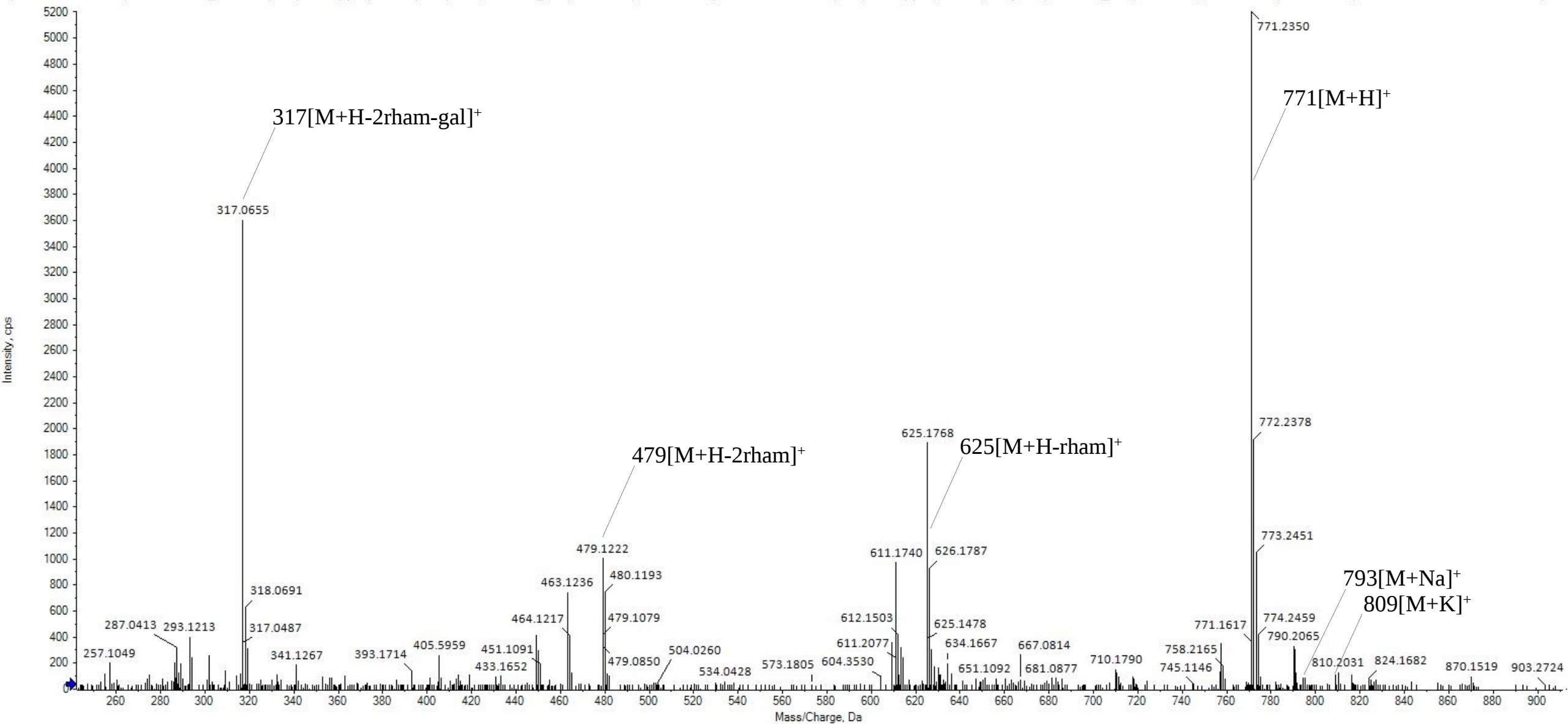
Peak 32_I 3-O-(2-O-glu)glu (I 3-O-sop) (SL10)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 12) - SL 1st_10-12(IT161904), +TOF MS (100 - 1200) from 16.807 to 16.881 min]



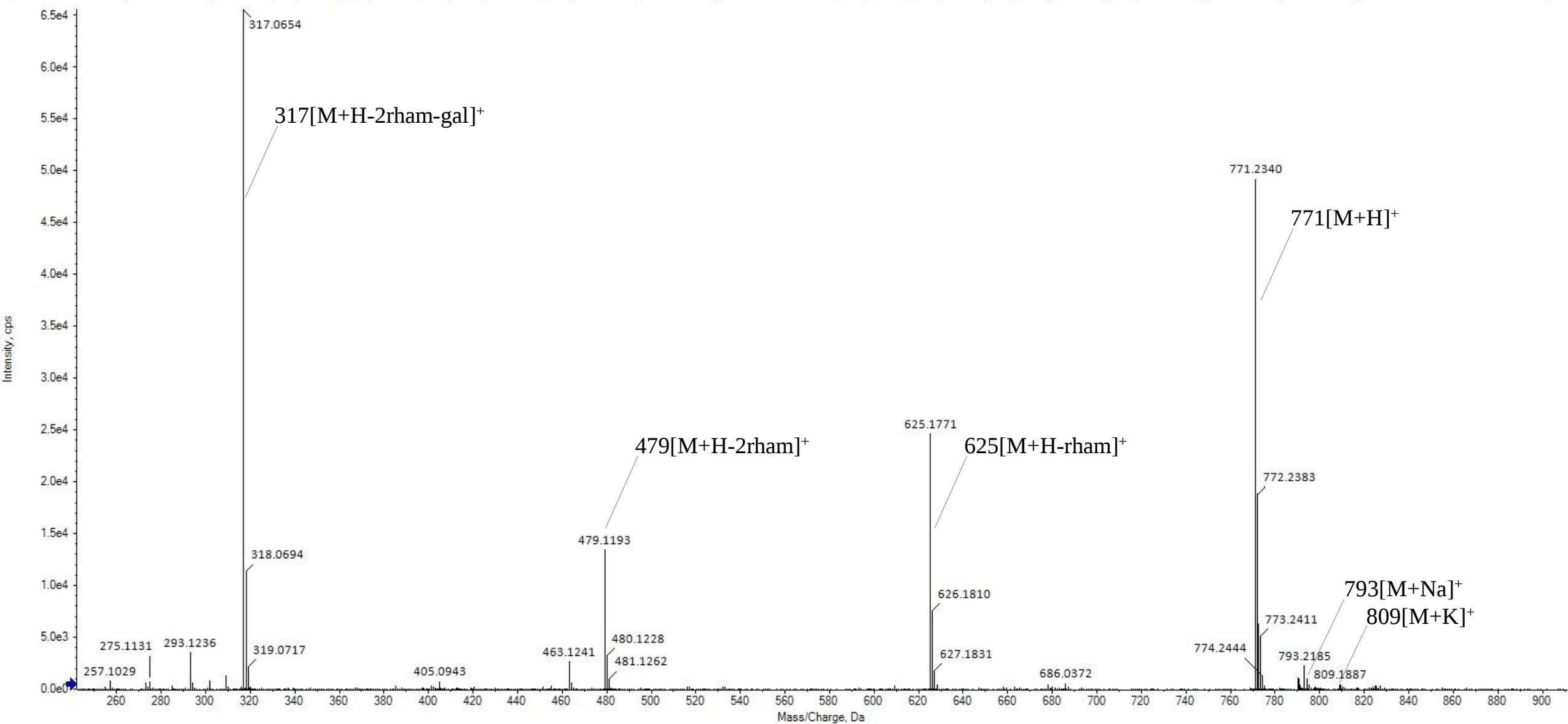
Peak 33_I 3-O-(2,6-di-O-rham)gal (soyanin III) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 16.530 to 16.586 min]



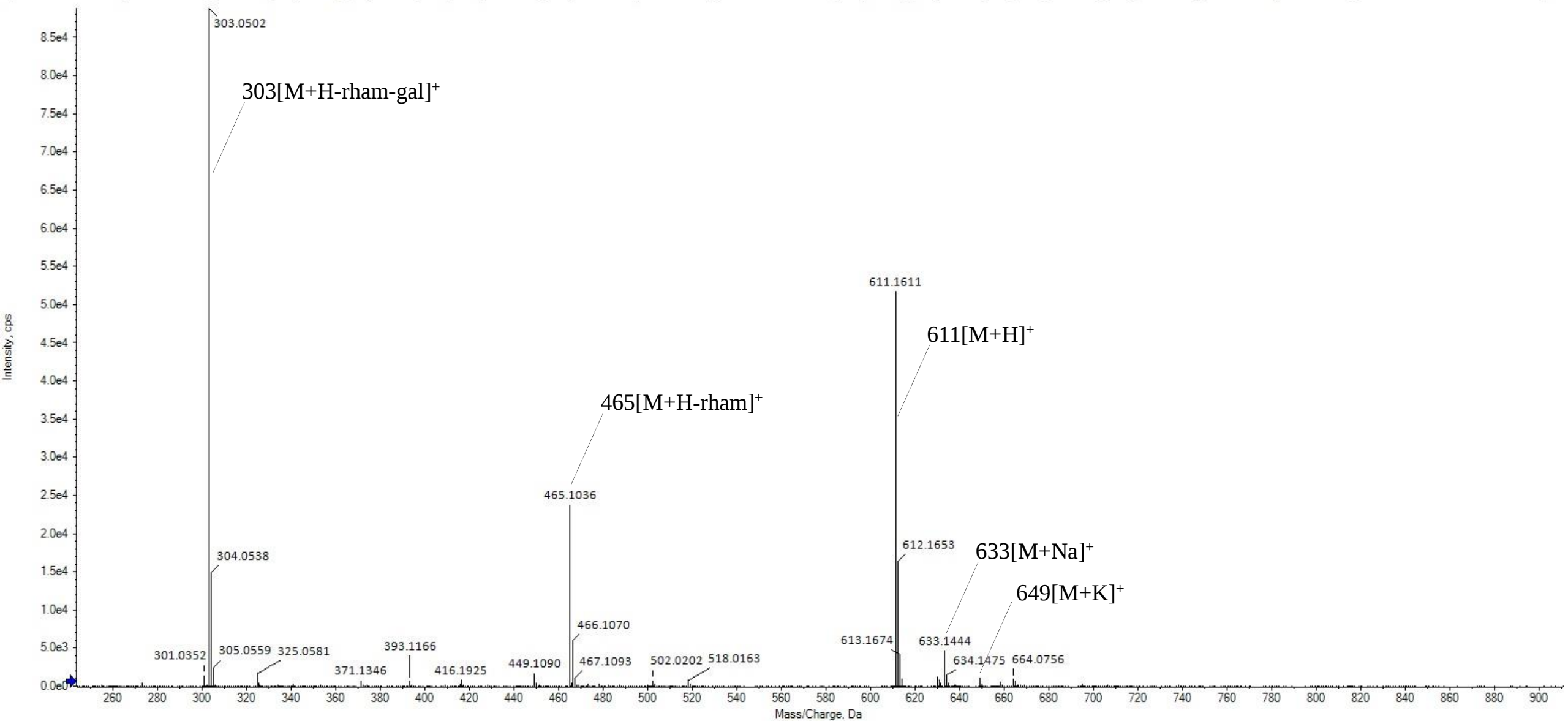
Peak 34_I 3-O-(4,6-di-O-rham)gal (soyanin IV) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 16.743 to 16.798 min]



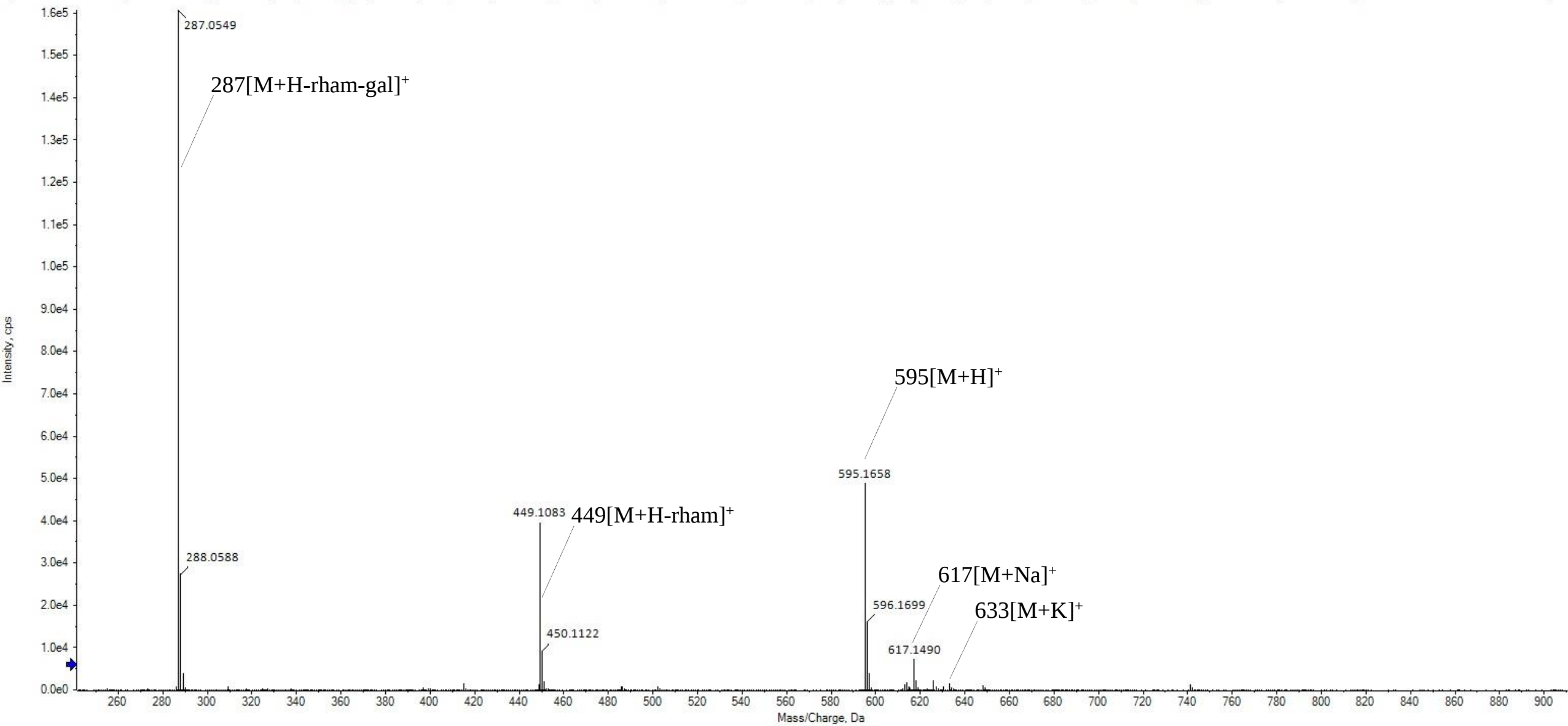
Peak 35_Q 3-O-(6-O-rham)gal (Q 3-O-rob) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 17.039 to 17.126 min]



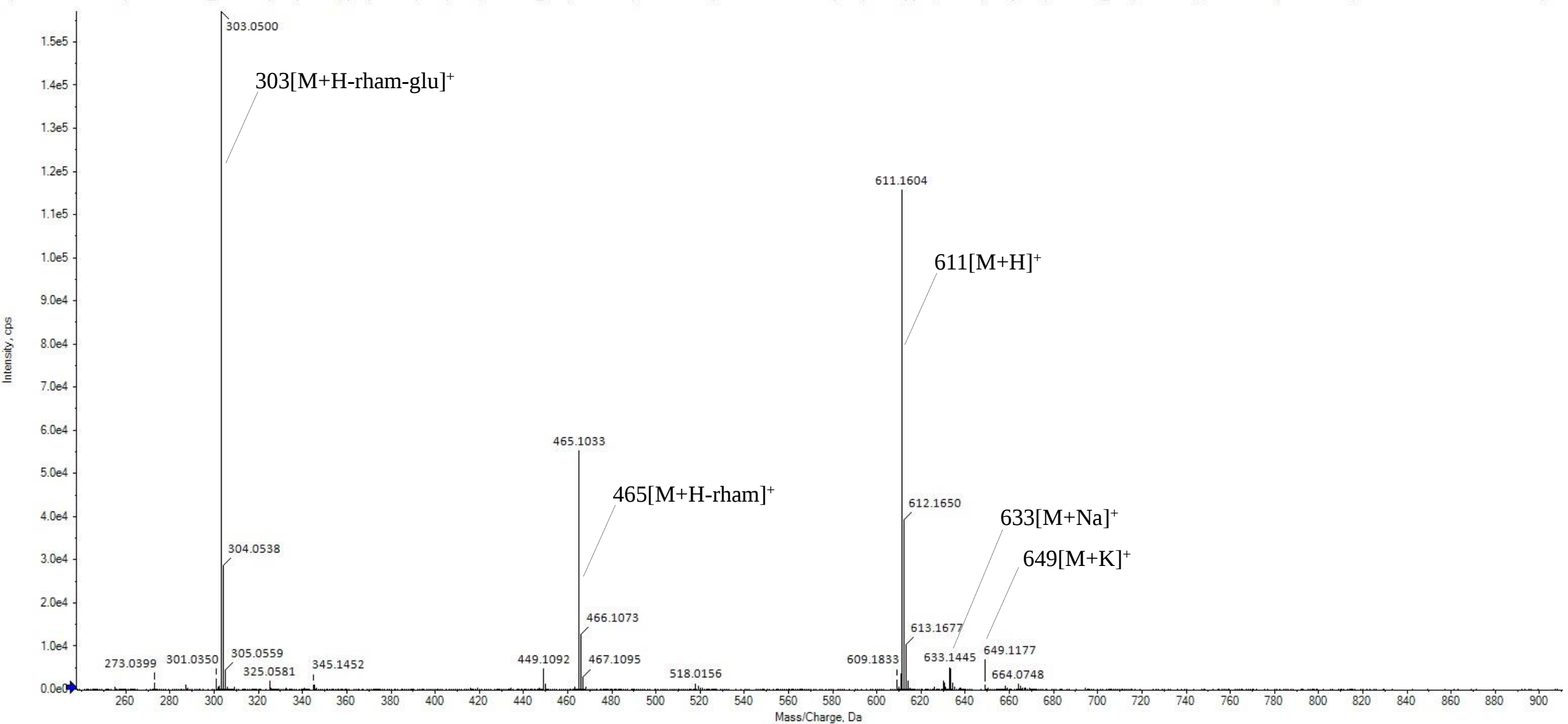
Peak 37_K 3-O-(2-O-rham)gal (SL10)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 12) - SL 1st_10-12(IT161904), +TOF MS (100 - 1200) from 17.413 to 17.478 min]



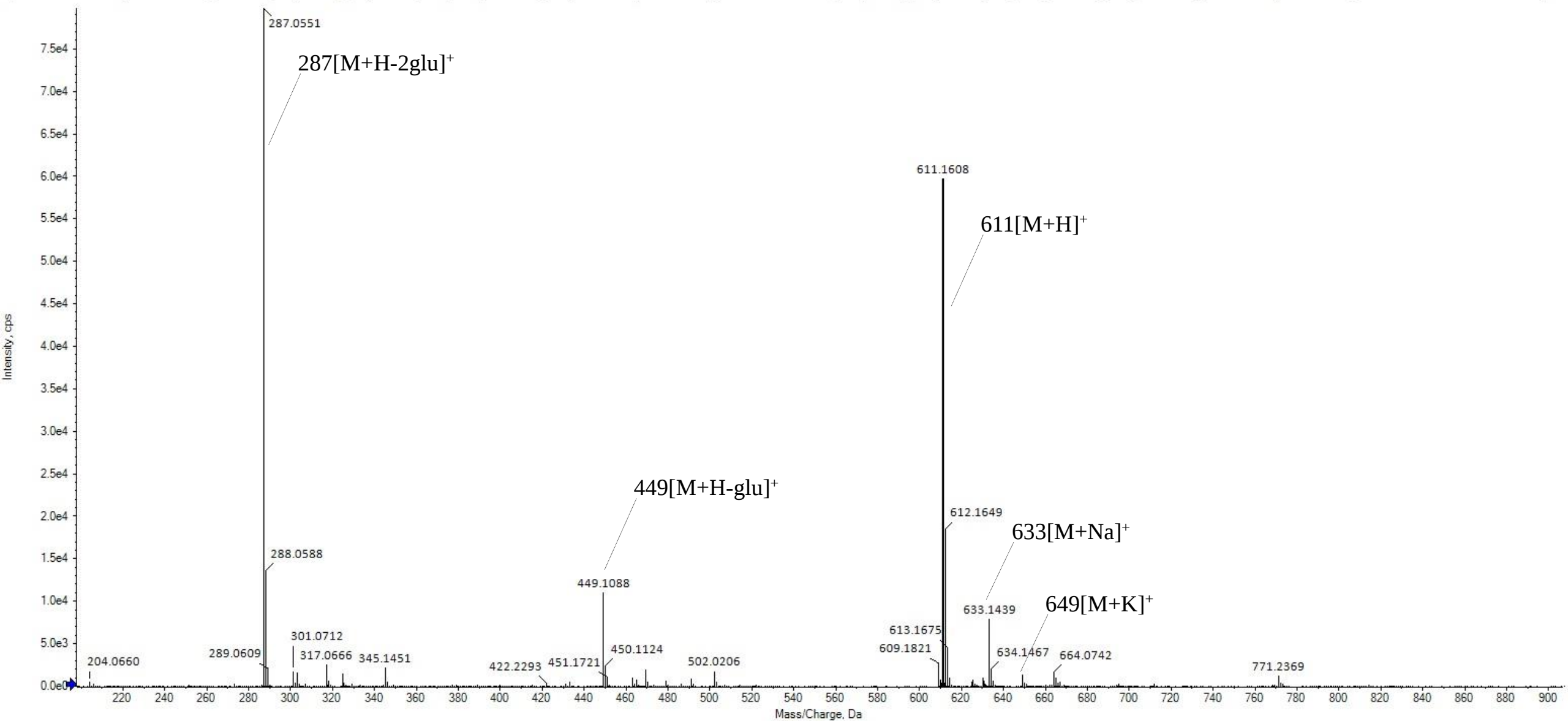
Peak 38_Q 3-O-(6-O-rham)glu (Q 3-O-rut, rutin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 17.436 to 17.501 min]



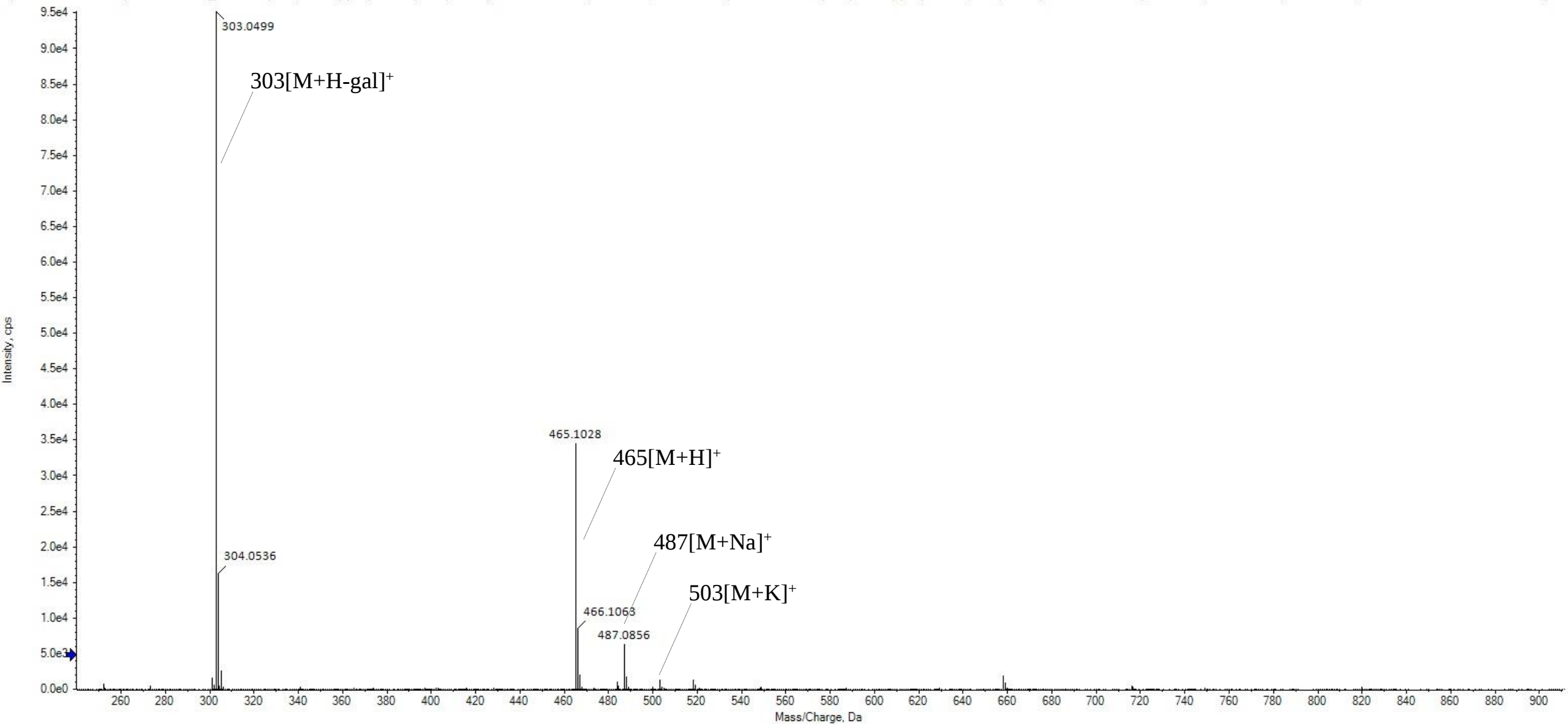
Peak 39_K 3-O-(6-O-glu)glu (K 3-O-gen) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 17.436 to 17.501 min]

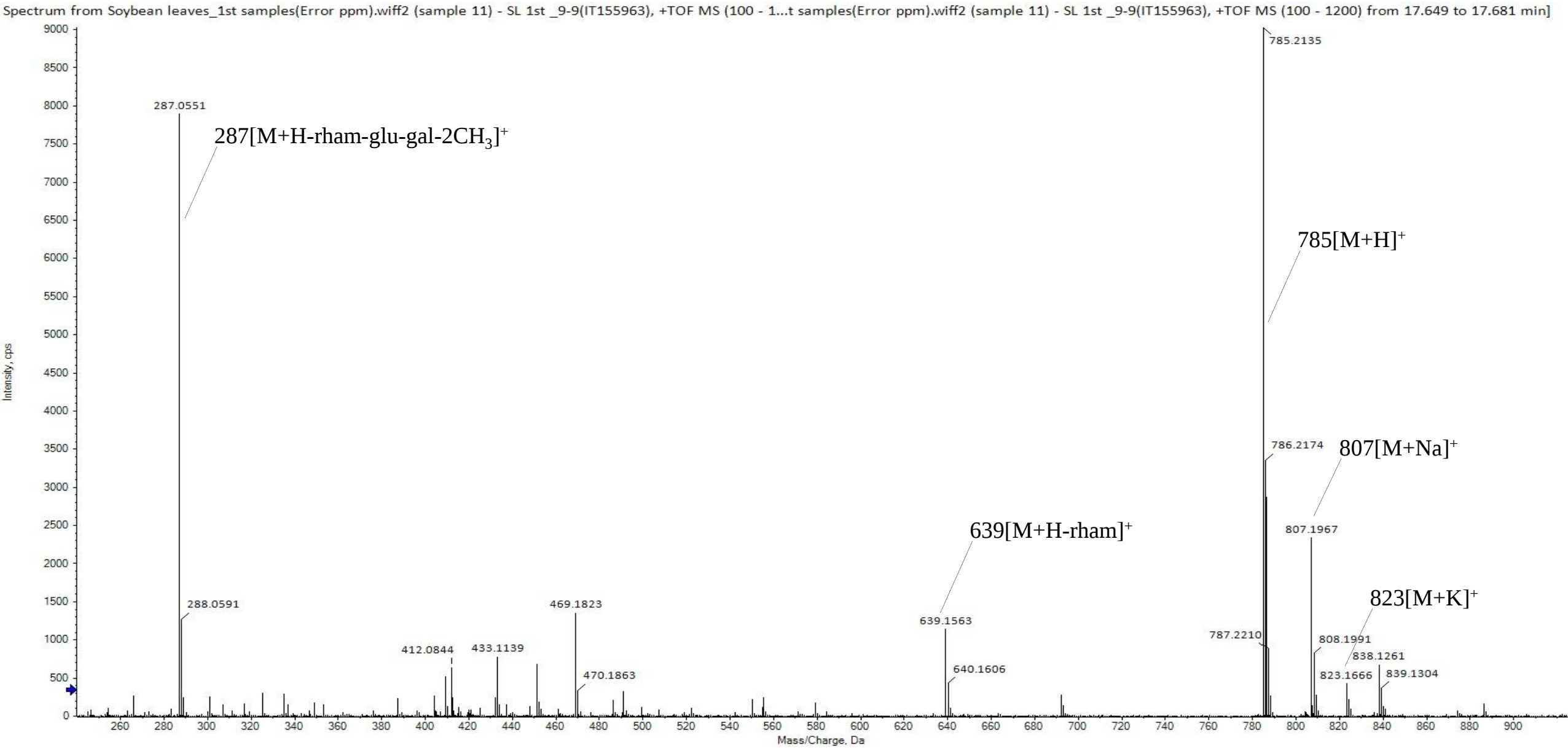


Peak 40_Q 3-O-gal (hyperoside) (SL18)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1... samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1200) from 17.838 to 17.880 min]

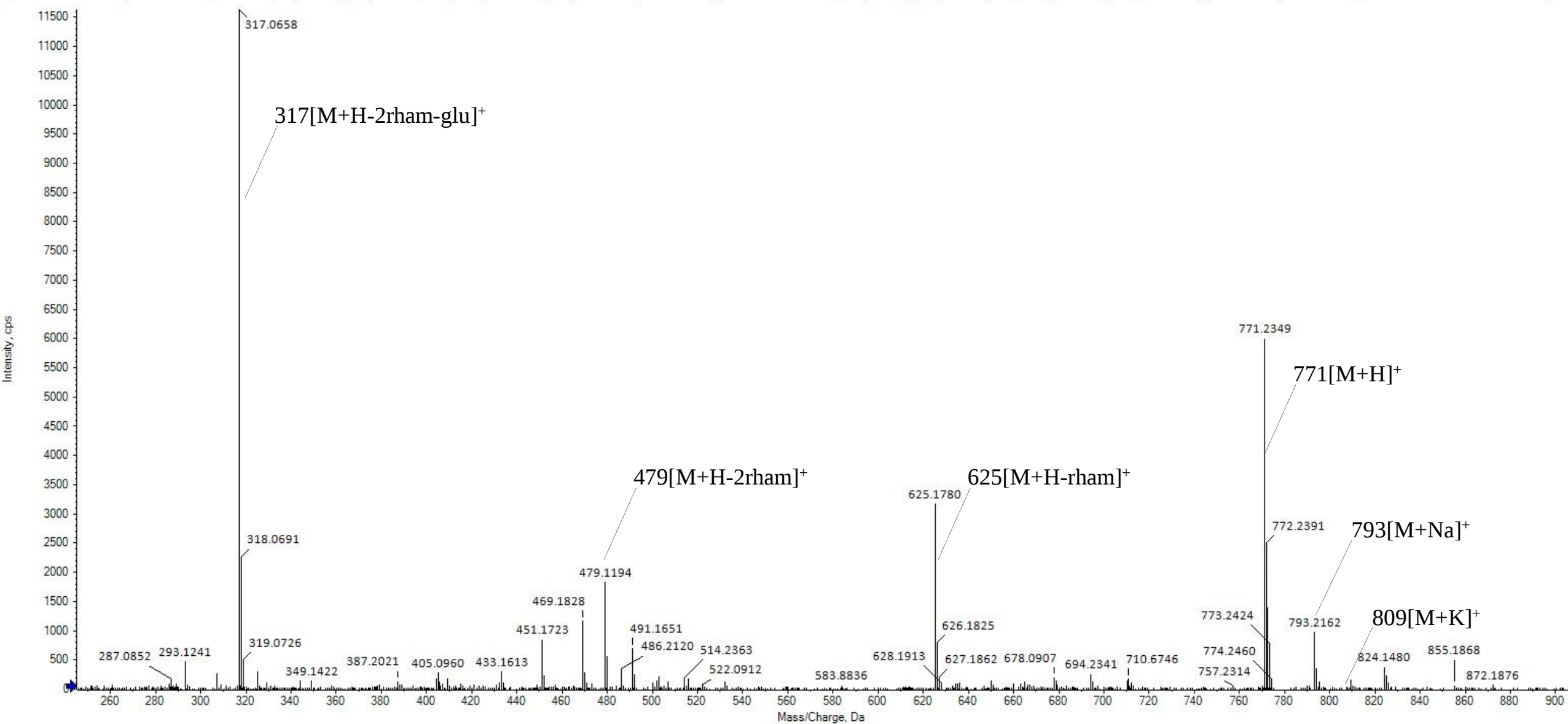


Peak 41_K 3-O-(2-O-glu-6-O-rham)gal DME (SL9)



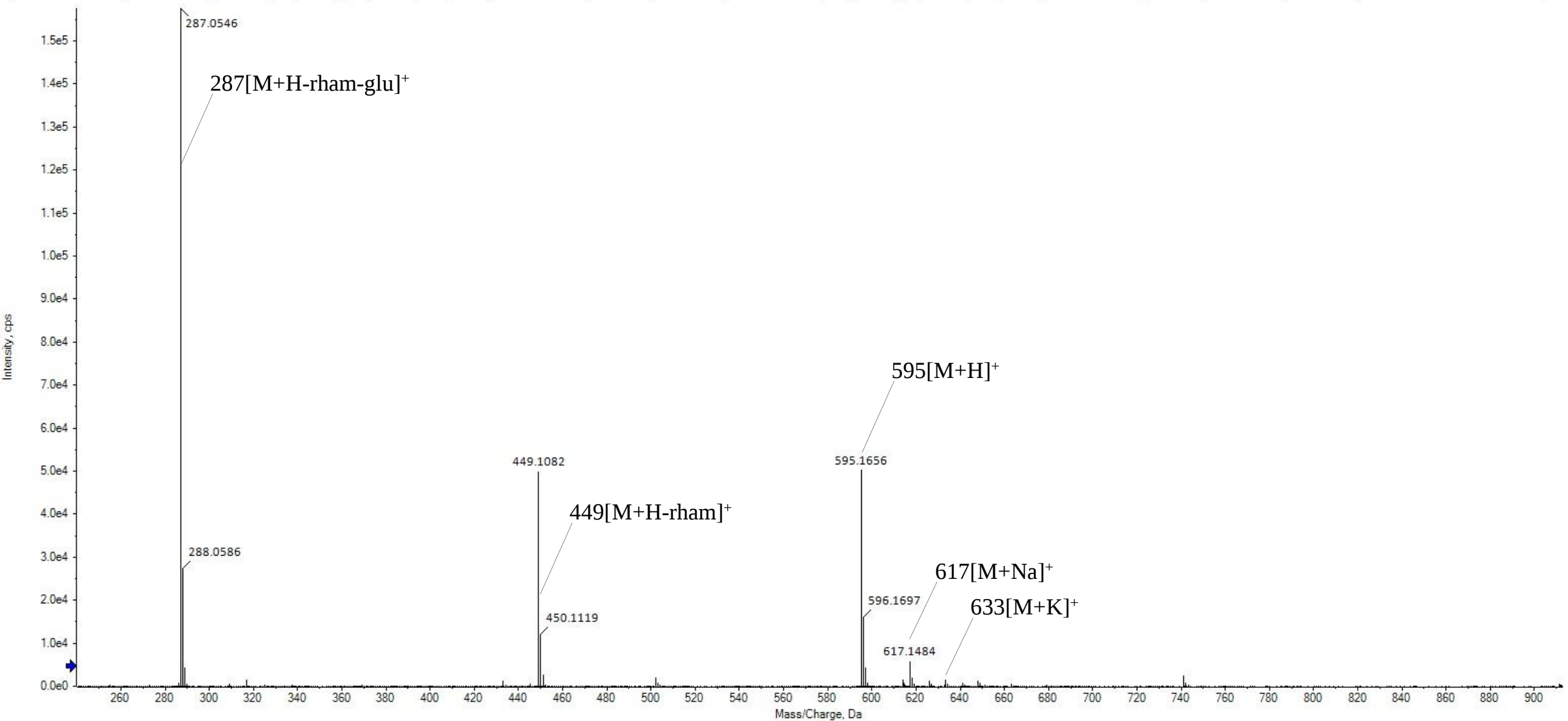
Peak 42_I 3-O-(2,6-di-O-rham)glu (soyanin V) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 17.478 to 17.524 min]



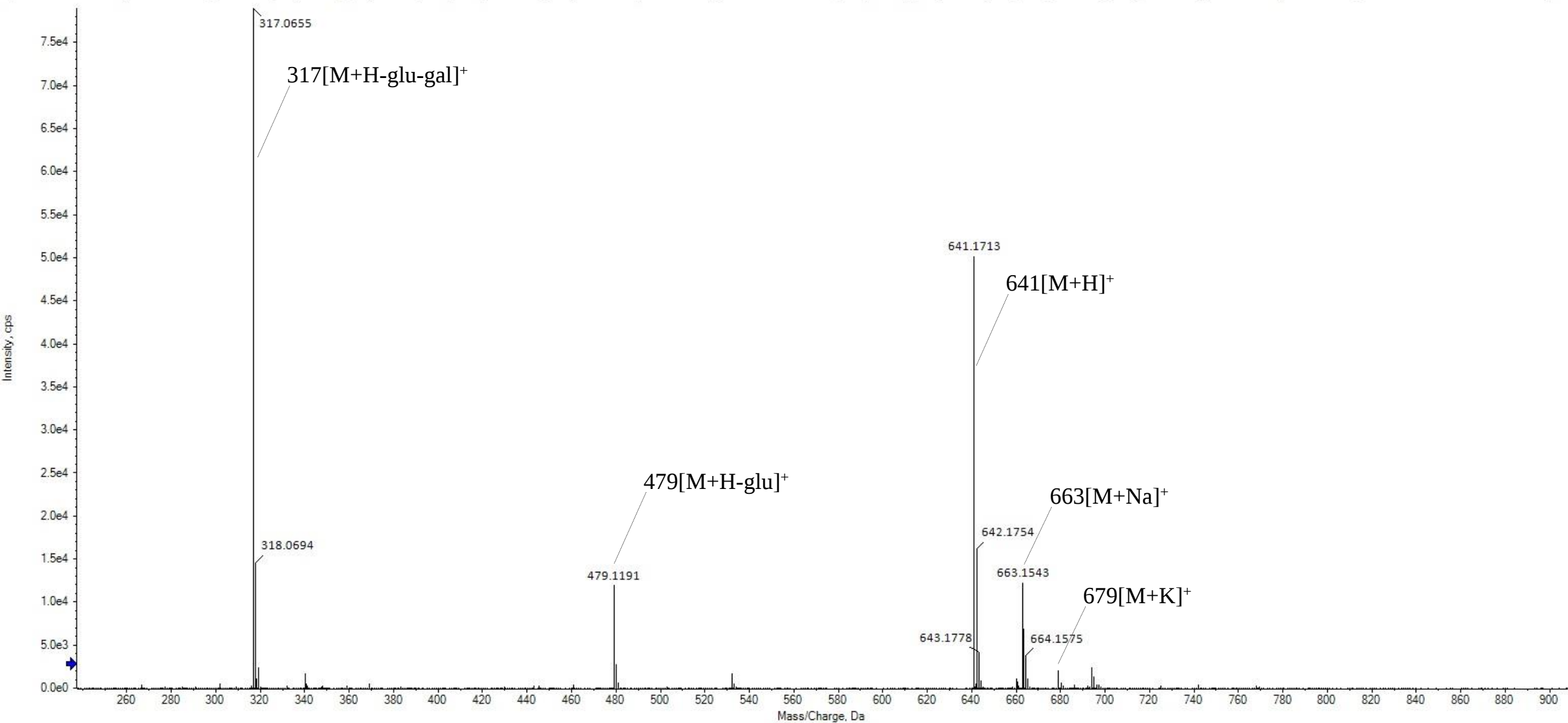
Peak 43_K 3-O-(2-O-rham)glu (SL18)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1... samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1200) from 17.954 to 18.028 min]



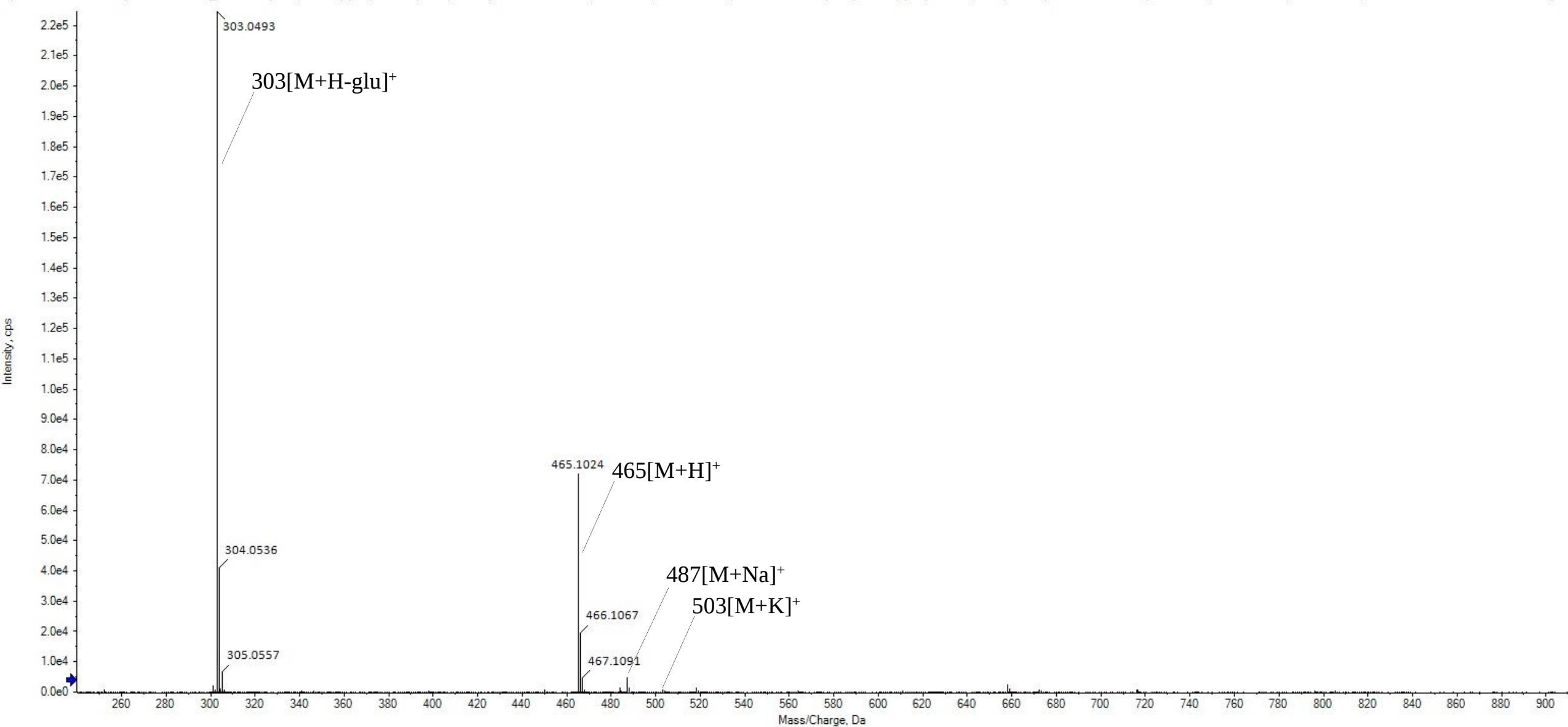
Peak 44_I 3-O-(6-O-glu)gal (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 17.690 to 17.764 min]



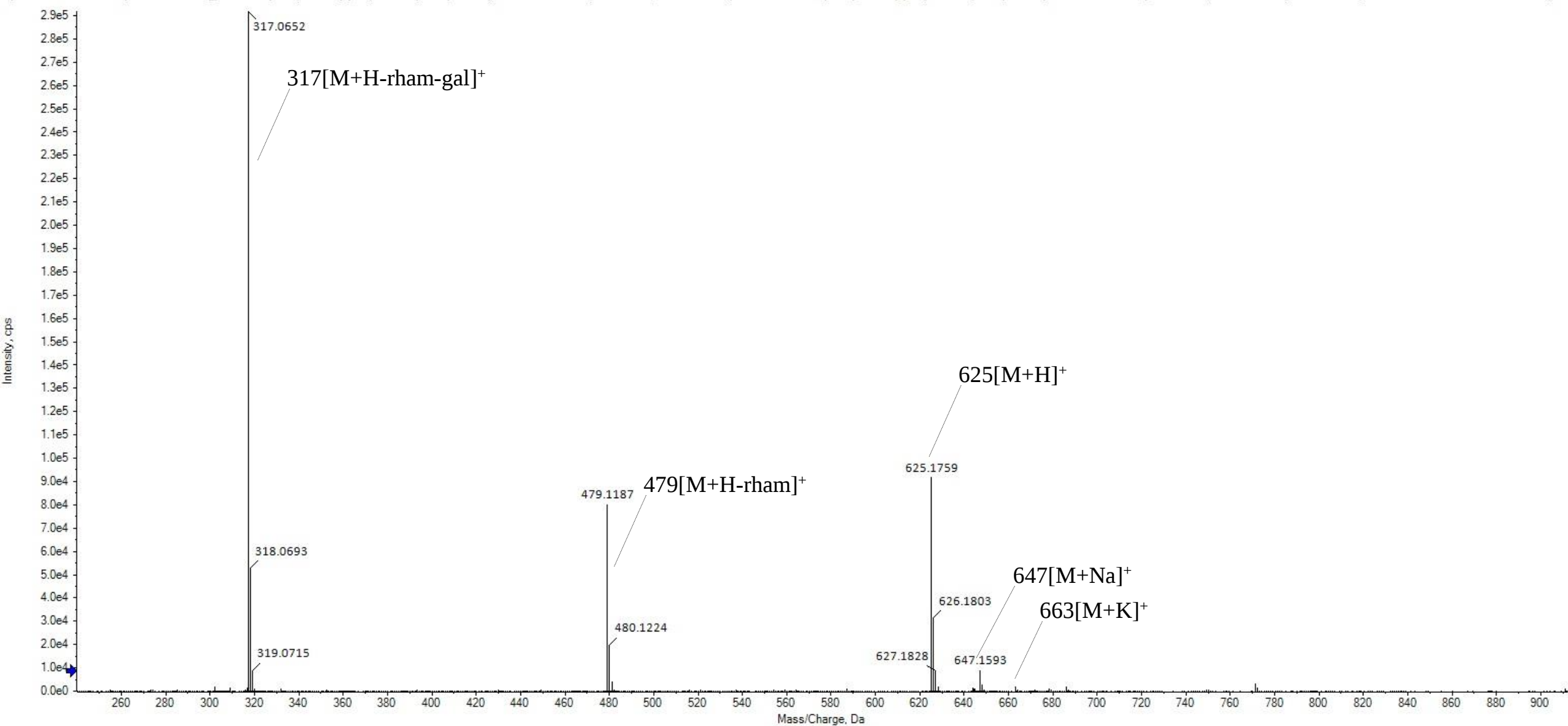
Peak 46_Q 3-O-glu (isoquercitrin) (SL18)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1... samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1200) from 18.264 to 18.305 min]



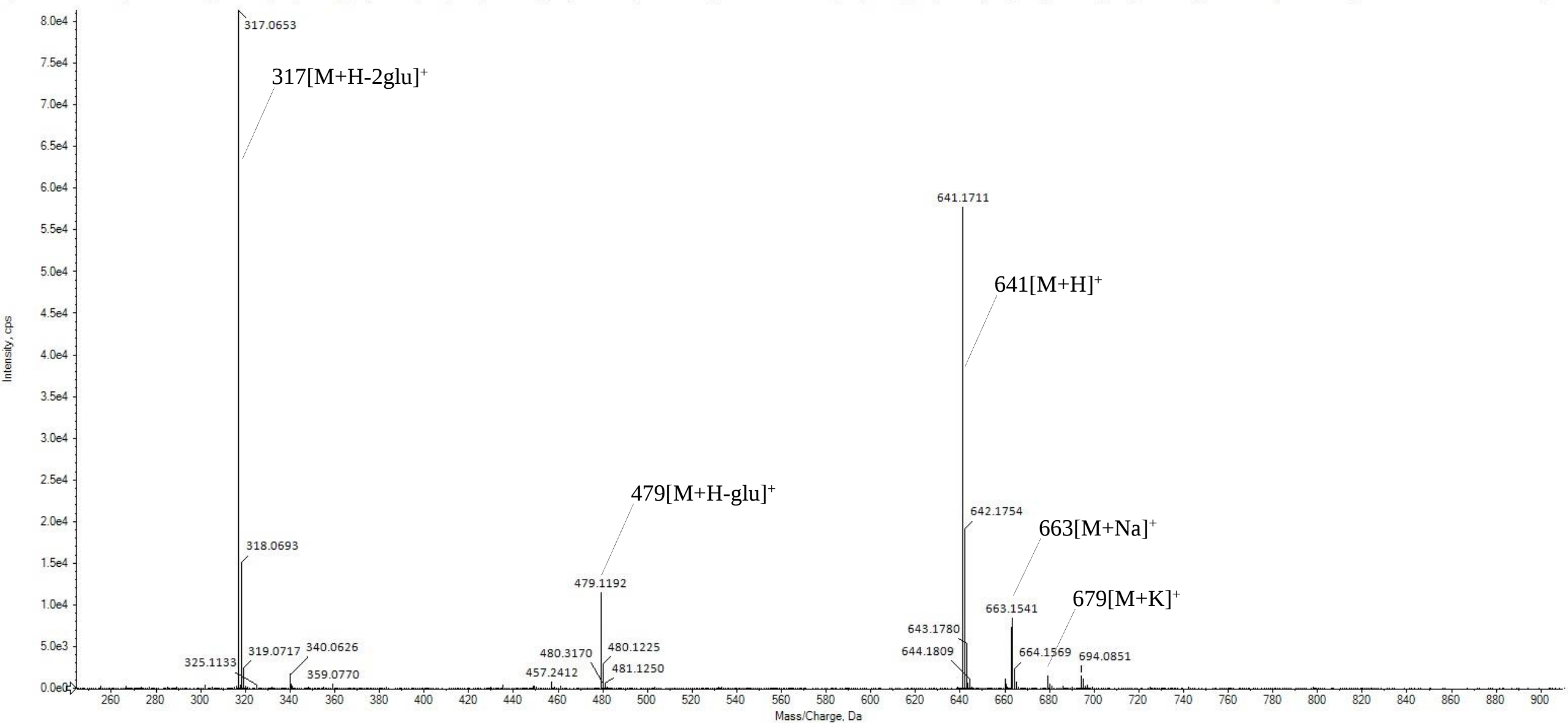
Peak 47_I 3-O-(2-O-rham)gal (SL18)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1... samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1200) from 18.342 to 18.402 min]



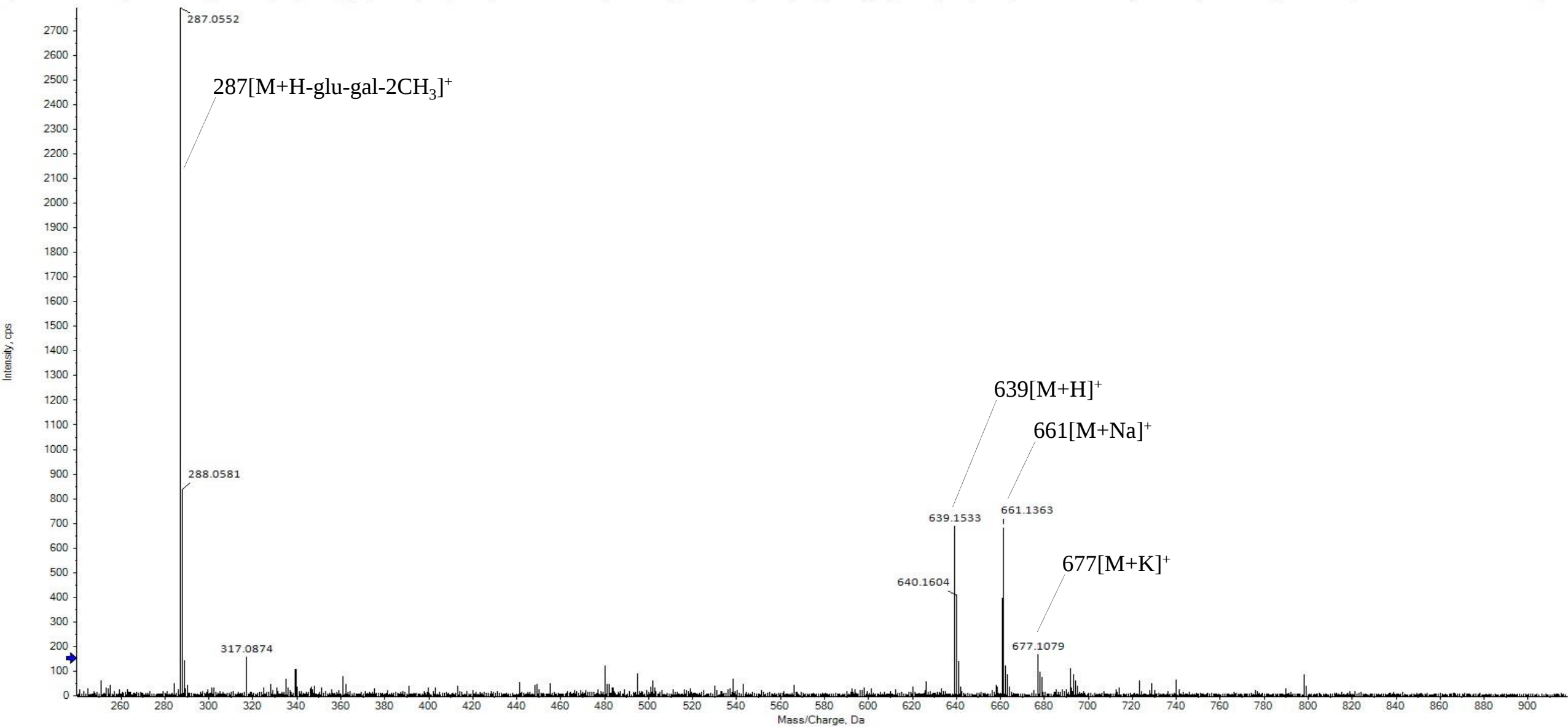
Peak 51_I 3-O-(6-O-glu)glu (I 3-O-gen) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 18.129 to 18.203 min]



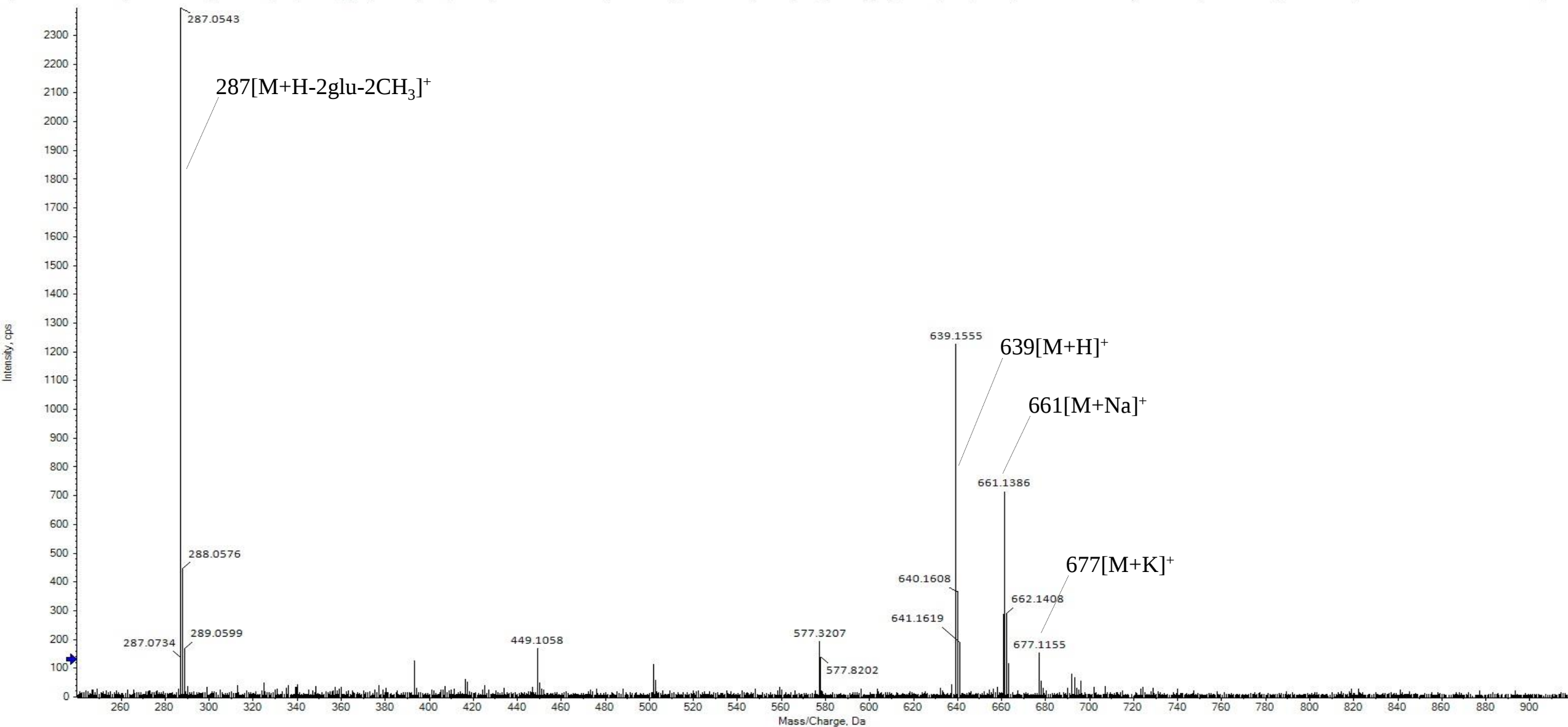
Peak 52_K 3-O-(2-O-glu)gal DME (SL21)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 23) - SL 1st 232-257(IT156272), +TOF MS (100...ples(Error ppm).wiff2 (sample 23) - SL 1st 232-257(IT156272), +TOF MS (100 - 1200) from 18.749 to 18.758 min]



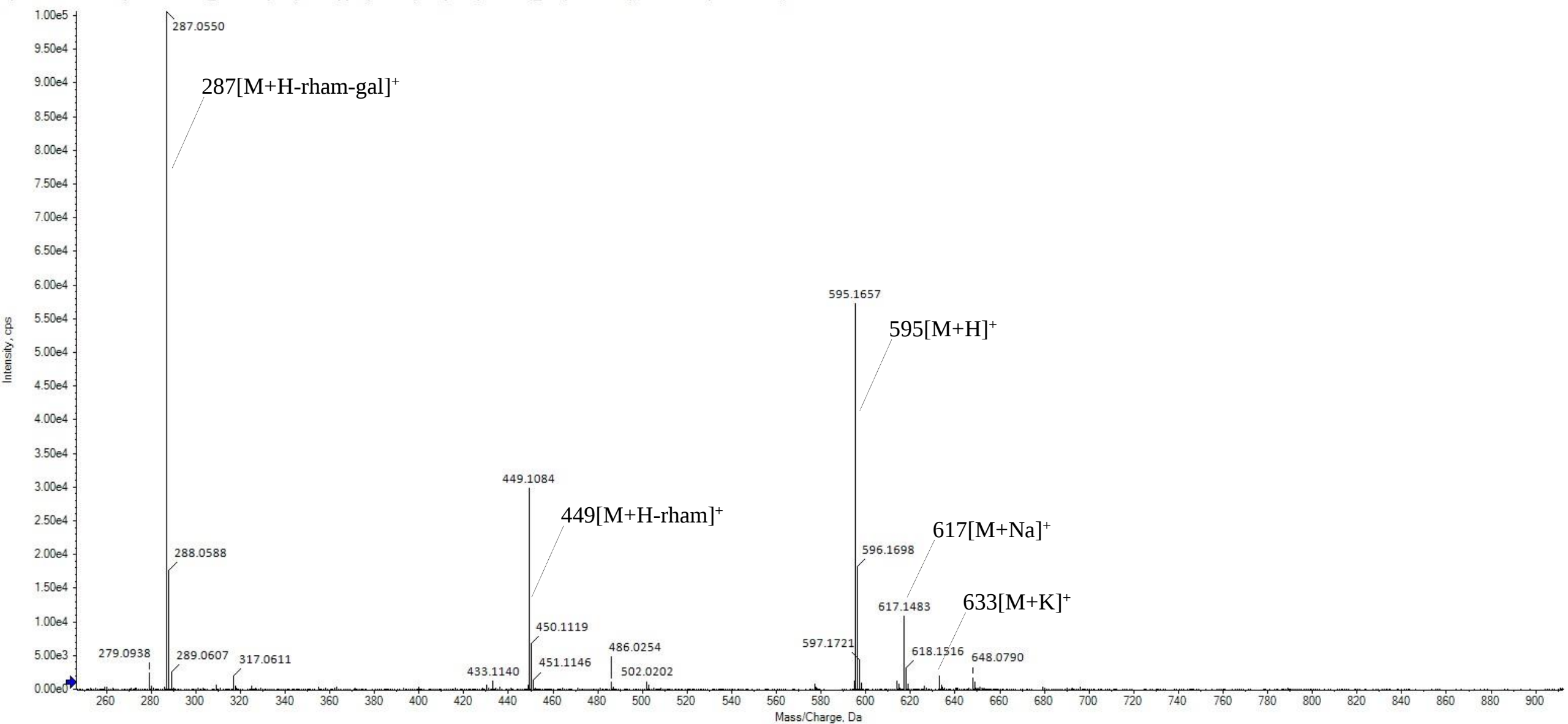
Peak 53_K 3-O-(2-O-glu)glu DME (SL21)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 23) - SL 1st 232-257(IT156272), +TOF MS (100...ples(Error ppm).wiff2 (sample 23) - SL 1st 232-257(IT156272), +TOF MS (100 - 1200) from 18.777 to 18.786 min]



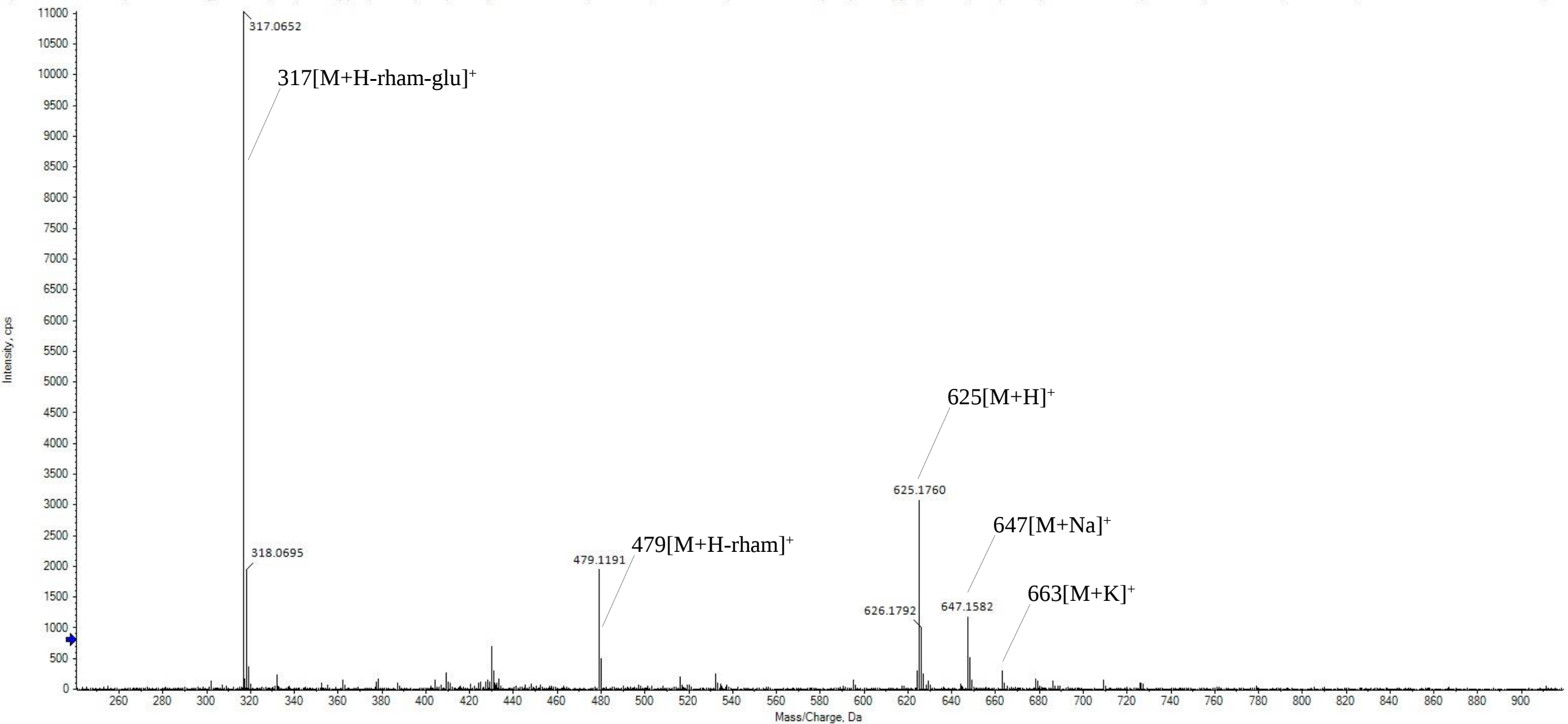
Peak 54_K 3-O-(6-O-rham)gal (K 3-O-rob, biorobin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 18.458 to 18.541 min



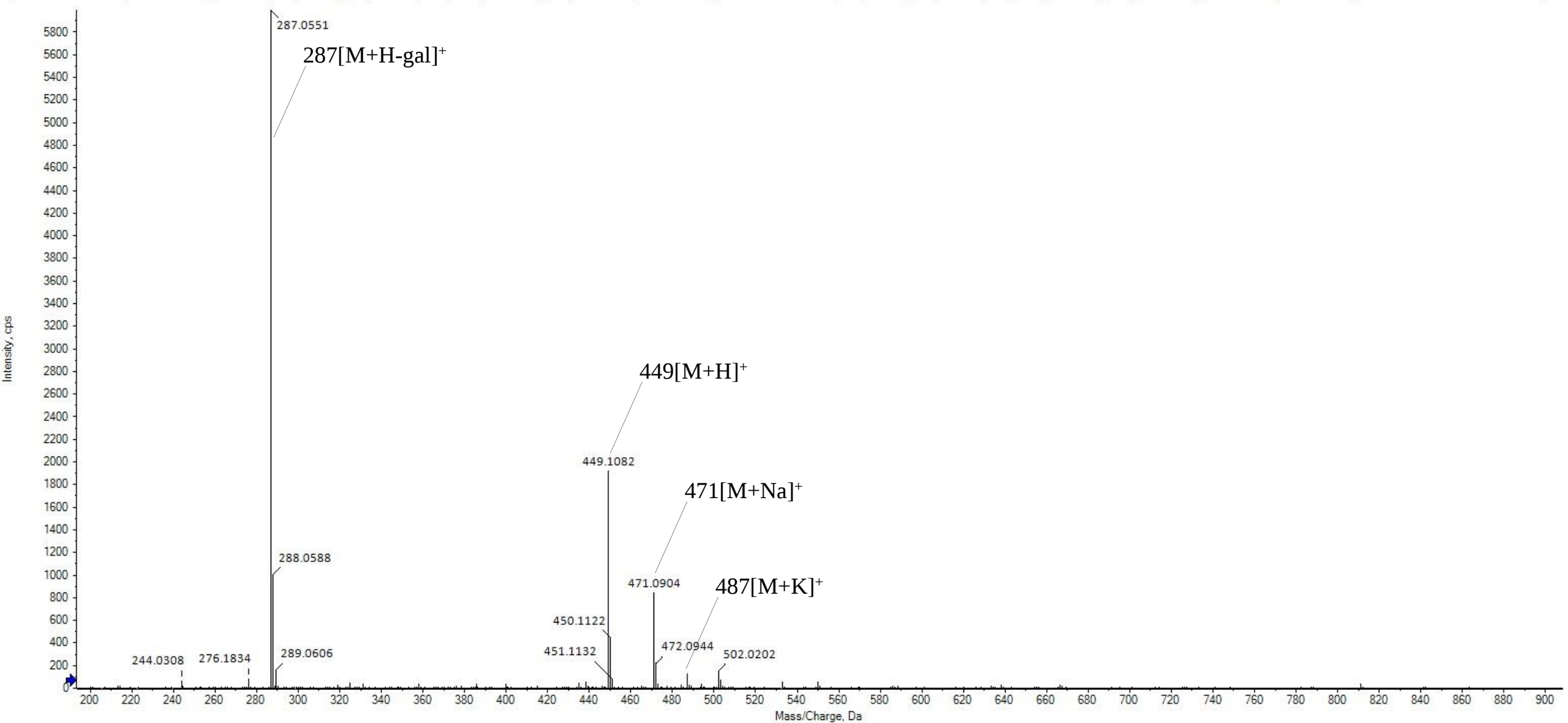
Peak 55_I 3-O-(2-O-rham)glu (I 3-O-neo, calendoflavoside) (SL18)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1... samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1200) from 18.901 to 18.962 min]



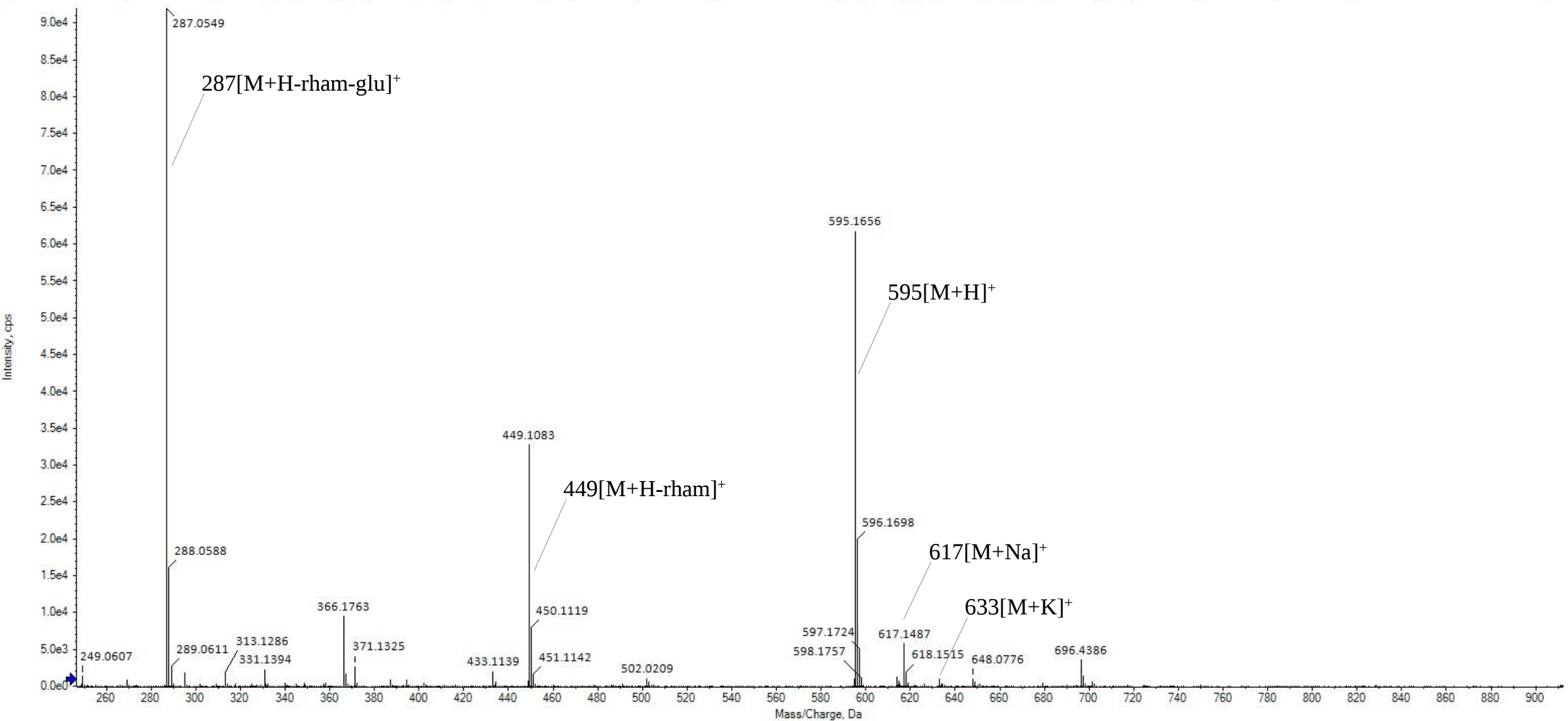
Peak 57_K 3-O-gal (trifolin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 19.299 to 19.341 min]



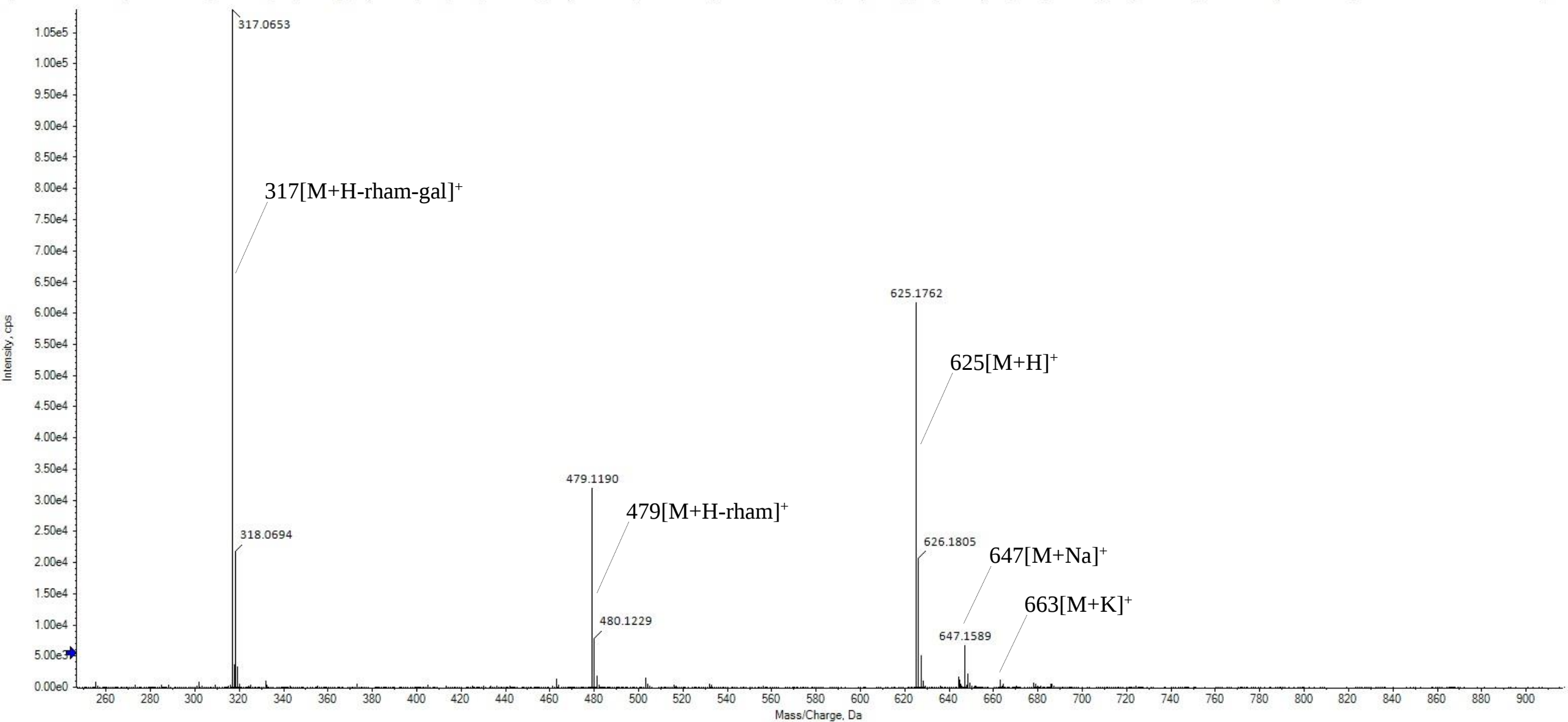
Peak 58_K 3-O-(6-O-rham)glu (K 3-O-rut, nicotiflorin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 19.507 to 19.553 min]



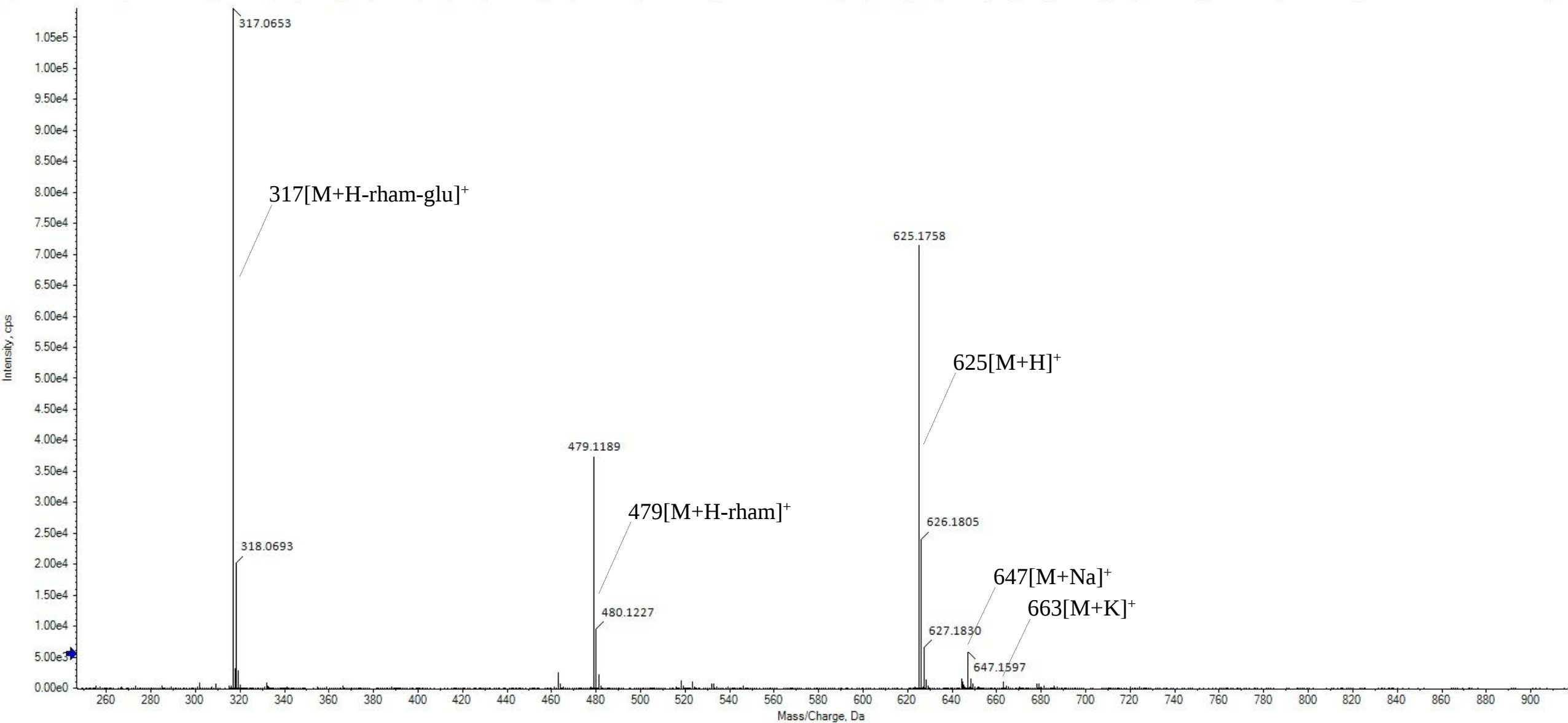
Peak 60_I 3-O-(6-O-rham)gal (I 3-O-rob) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 19.650 to 19.701 min]



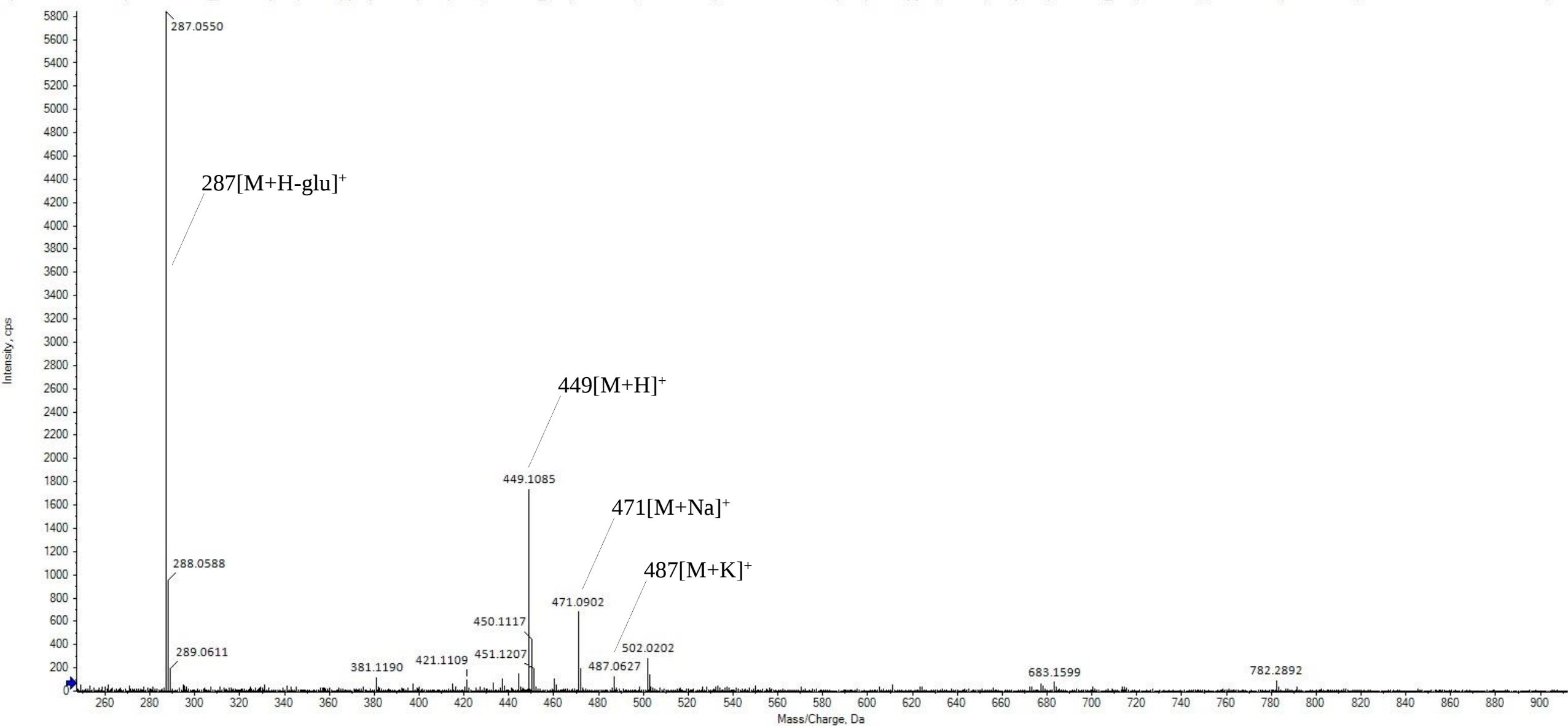
Peak 62_I 3-O-(6-O-rham)glu (I 3-O-rut, narcissin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 20.025 to 20.071 min]



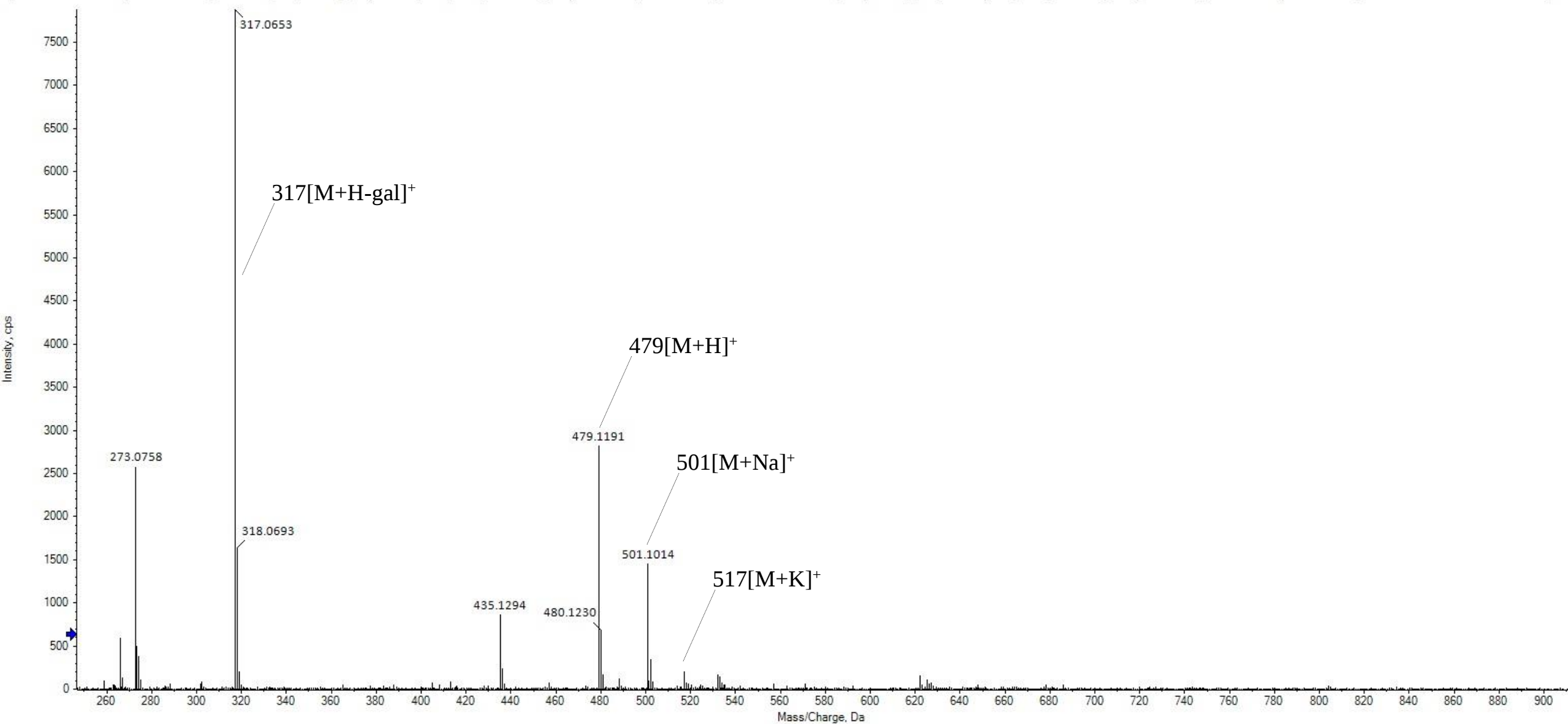
Peak 63_K 3-O-glu (astragalin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 20.140 to 20.187 min]



Peak 64_I 3-O-gal (cacticin) (SL4)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 120...st samples(Error ppm).wiff2 (sample 6) - SL 1st_1-1(IT021665), +TOF MS (100 - 1200) from 20.205 to 20.242 min]



Peak 66_I 3-O-glu (SL18)

Spectrum from Soybean leaves_1st samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1... samples(Error ppm).wiff2 (sample 20) - SL 1st 41-45(IT274515, +TOF MS (100 - 1200) from 21.587 to 21.620 min]

