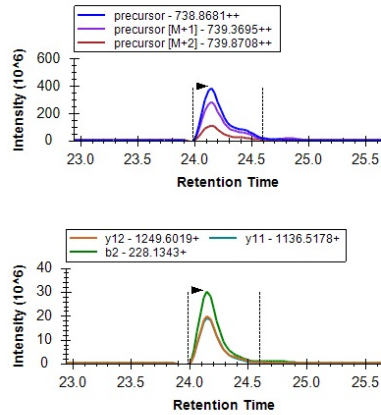


Legend Supplementary Fig. S1.

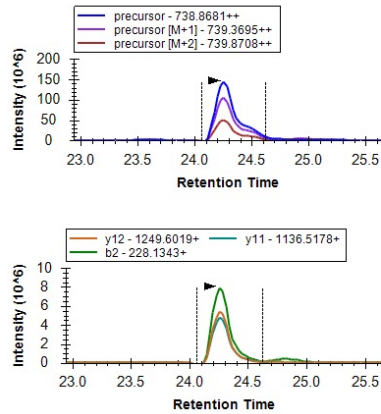
Chromatographic traces of three tryptic peptides from each of α A, α Ba, and α Bb-crystallins from wild-type and *cryaa*, *cryaba*, and *cryabb* mutant lenses from adults. Wild-type and *cryaba* mutant lenses were 12 months old and *cryaa* and *cryabb* mutant lenses were 6 months old. **A-C**: α A 53-66, 90-100, and 121-146, respectively. **D-F**: α Ba 80-80, 90-100, and 155-168, respectively. **G-I**: α Bb: 12-20, 46-58, and 82-92, respectively. In each panel A-I: 1: wild-type lens 1, 2: wild-type lens 2, 3: *cryaa* mutant lens (first generated mutant), 4: *cryaa* null lens (second generated mutant), 5: *cryaba* mutant lens 1, 6: *cryaba* mutant lens 2, 7: *cryabb* mutant lens 1, 8: *cryabb* mutant lens 2. In each pair of chromatograms, the upper trace shows the peak for the designated peptide precursor ion of the designated charge state, and the lower trace shows three corresponding coeluting peptide y- and b- fragment ions. The intensity scales for each grid of chromatographic peaks were not set at the same scale so that lower intensity peaks could be observed. When peaks were not observable in digests of null lenses, the intensity scale was set at the same value as the lowest intensity scale on chromatograms from lenses where the respective α -crystallin was not knocked out. Underlined cysteines denote alkylation by iodoacetamide. Chromatograms were generated using Skyline software and can be accessed on PanoramaWeb (accession number pending).

A) α A: R.NILDSSNSGVSEVR.S [53, 66]

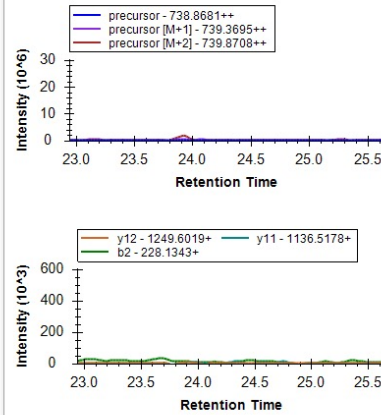
1. Wild-type lens 1



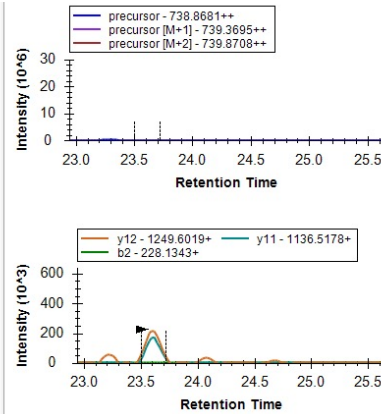
2. Wild-type lens 2



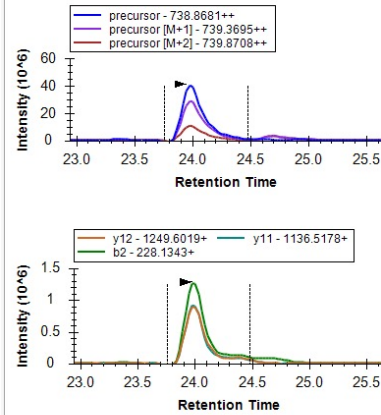
3. *cryaa* mutant (1st generated)



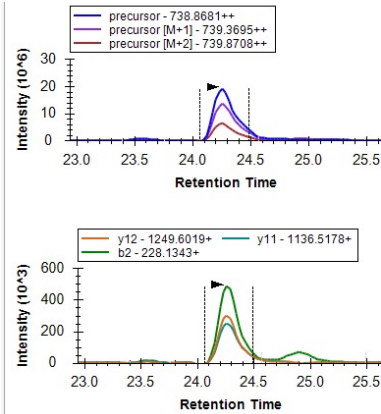
4. *cryaa* mutant (2nd generated)



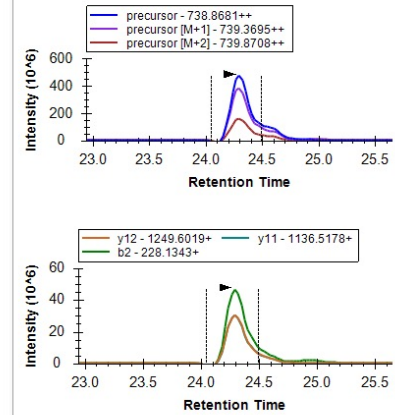
5. *cryaba* mutant lens 1



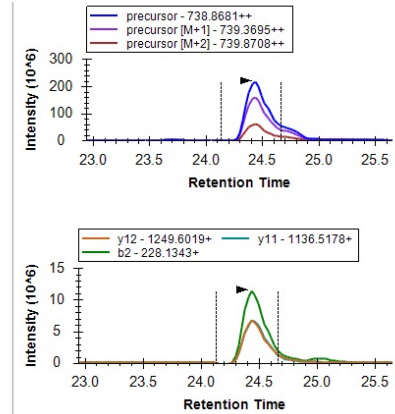
6. *cryaba* mutant lens 2



7: *cryabb* mutant lens 1

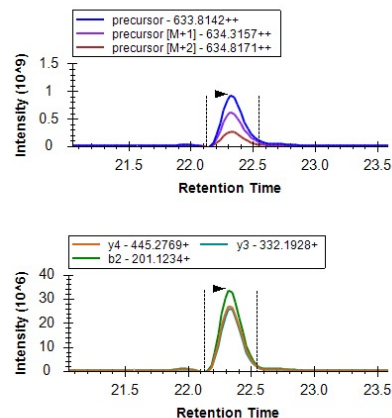


8: *cryabb* mutant lens 2

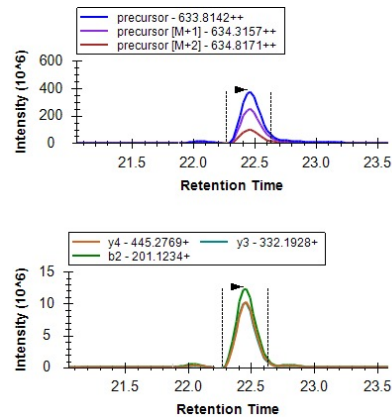


B) α A:K.VTDDYVEIQGK.H [90, 100]

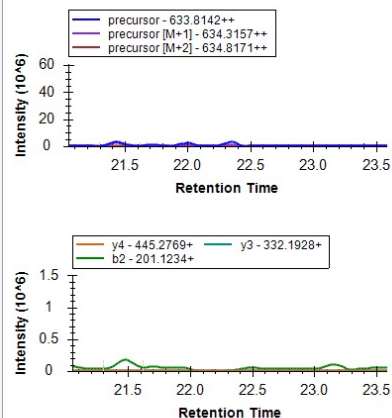
1. Wild-type lens 1



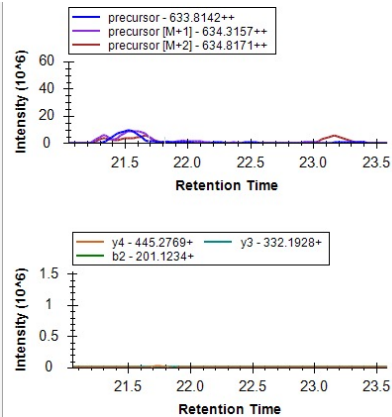
2. Wild-type lens 2



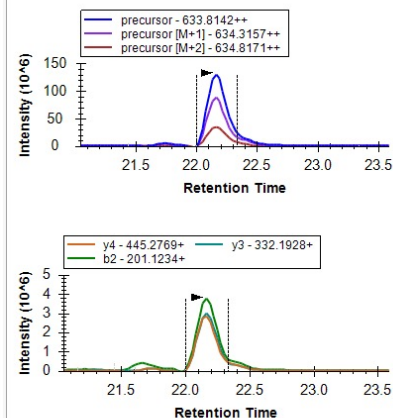
3. *cryaa* mutant (1st generated)



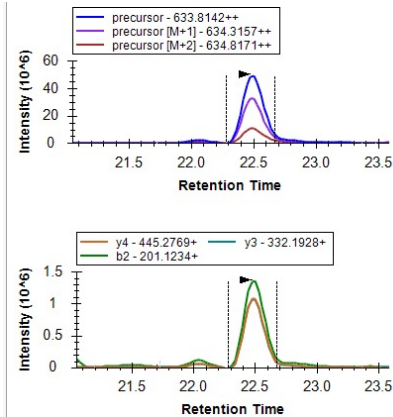
4. *cryaa* mutant (2nd generated)



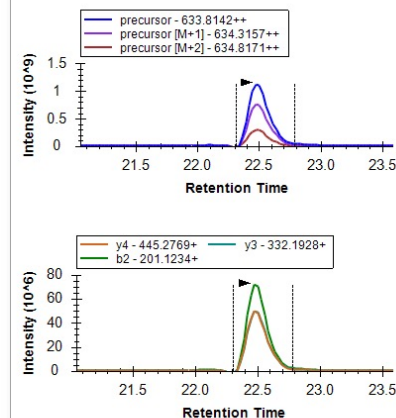
5. *cryaba* mutant lens 1



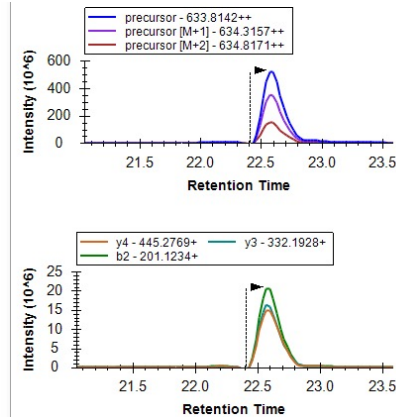
6. *cryaba* mutant lens 2



7: *cryabb* mutant lens 1

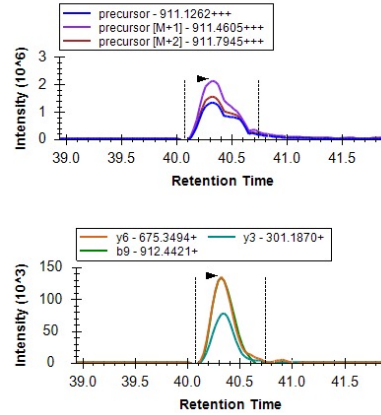


8: *cryabb* mutant lens 2

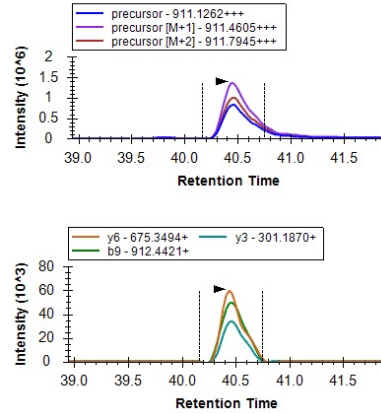


C) α A: R.LPSNVDQSAITCTLSADGLLLTCGPK.T [121, 146]

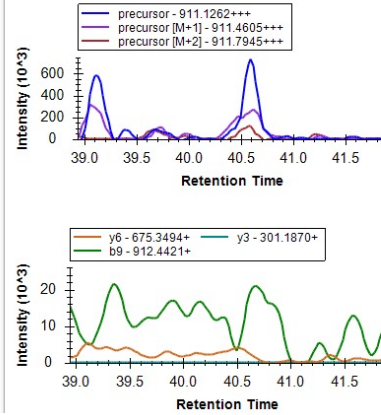
1. Wild-type lens 1



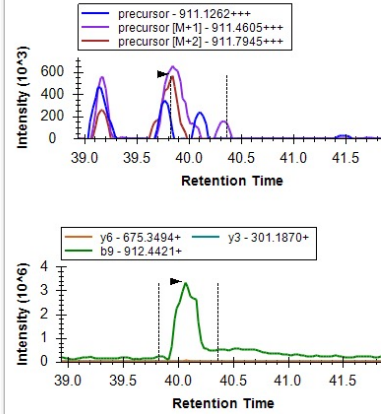
2. Wild-type lens 2



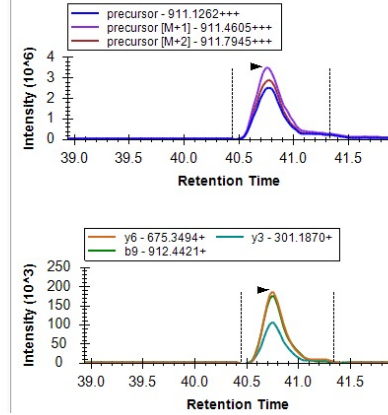
3. *cryaa* mutant (1st generated) 5. *cryaba* mutant lens 1



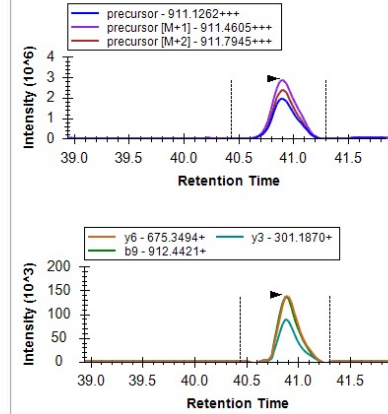
4. *cryaa* mutant (2nd generated) 6. *cryaba* mutant lens 2



7. *cryabb* mutant lens 1

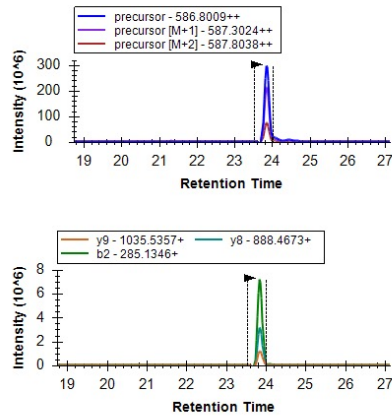


8. *cryabb* mutant lens 2

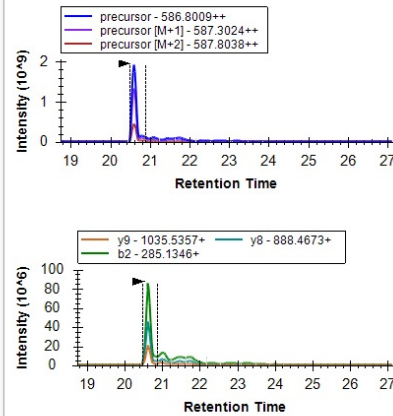


D) α Ba: K.HFSPDELTVK.V [80, 89]

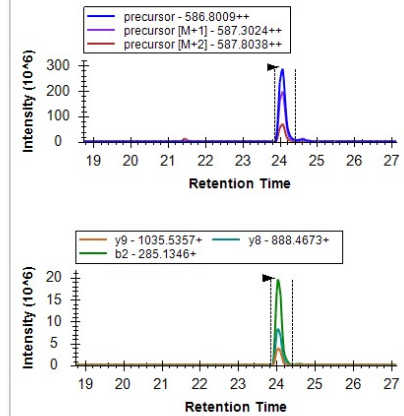
1. Wild-type lens 1



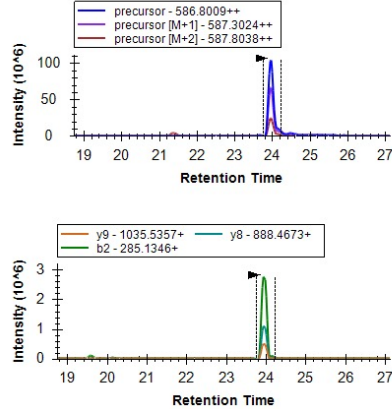
3. *cryaa* mutant (1st generated) 5. *cryaba* mutant lens 1



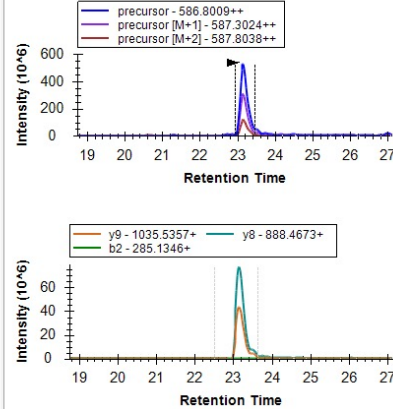
7: *cryabb* mutant lens 1



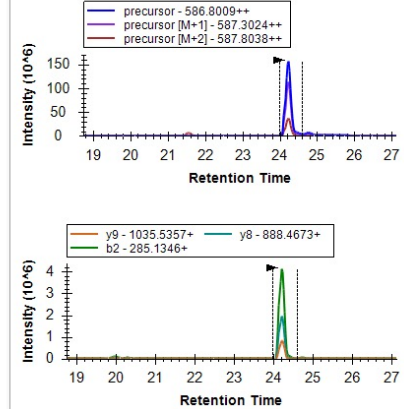
2. Wild-type lens 2



4. *cryaa* mutant (2nd generated) 6. *cryaba* mutant lens 2

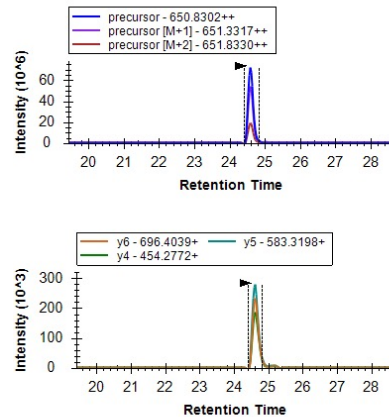


8: *cryabb* mutant lens 2

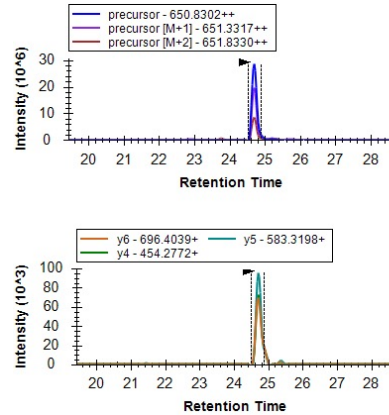


E) α Ba: K.VNEDFIEIHGK.H [90, 100]

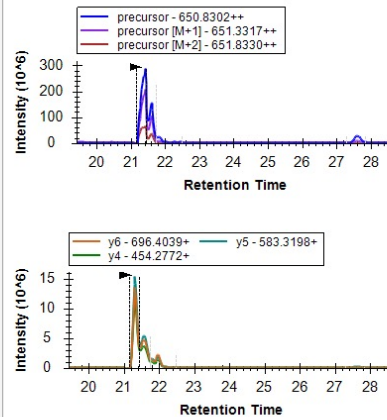
1. Wild-type lens 1



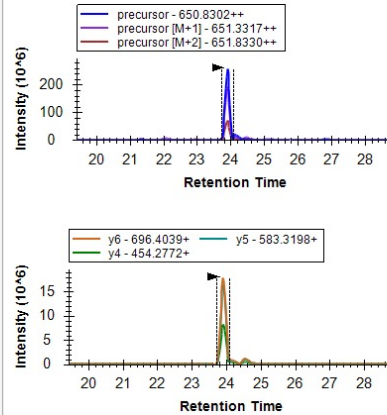
2. Wild-type lens 2



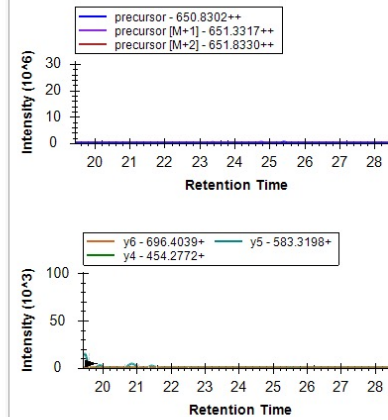
3. *cryaa* mutant (1st generated)



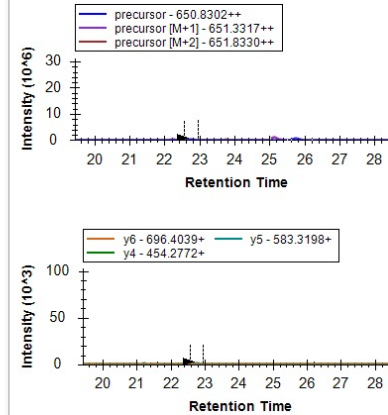
4. *cryaa* mutant (2nd generated)



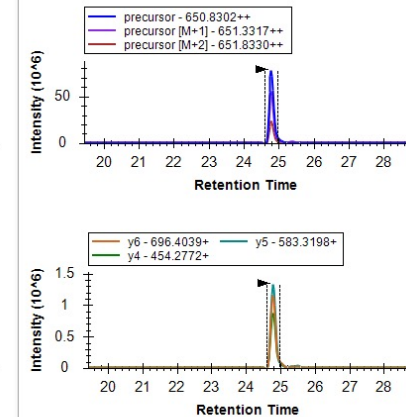
5. *cryaba* mutant lens 1



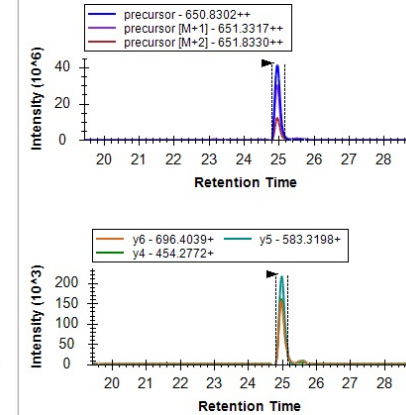
6. *cryaba* mutant lens 2



7: *cryabb* mutant lens 1

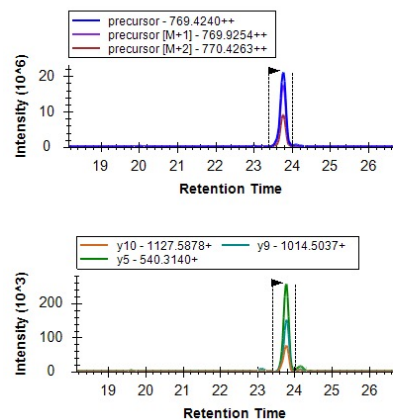


8: *cryabb* mutant lens 2

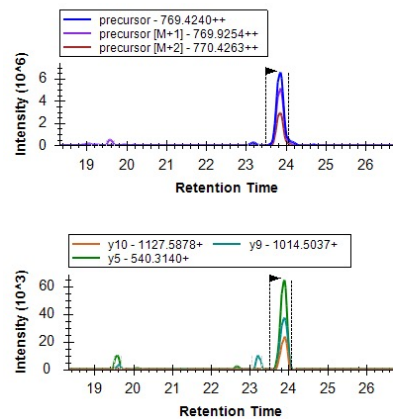


F) α Ba: R.SIPIICGEKPPAQK.- [155, 168]

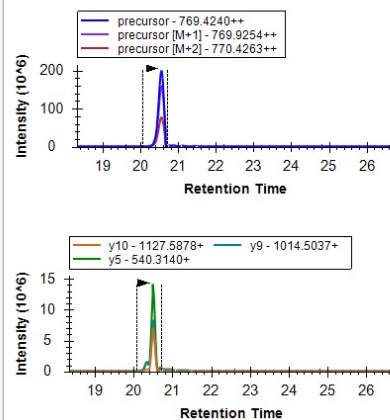
1. Wild-type lens 1



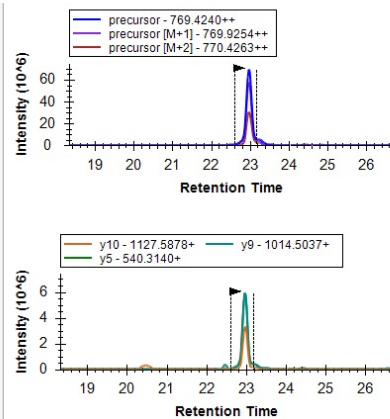
2. Wild-type lens 2



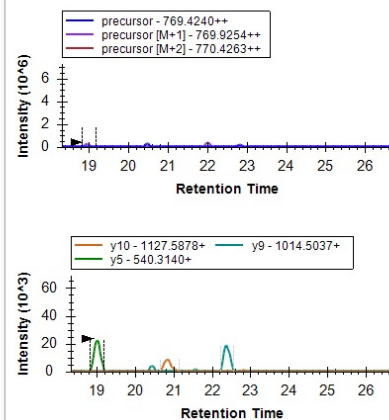
3. *cryaa* mutant (1st generated)



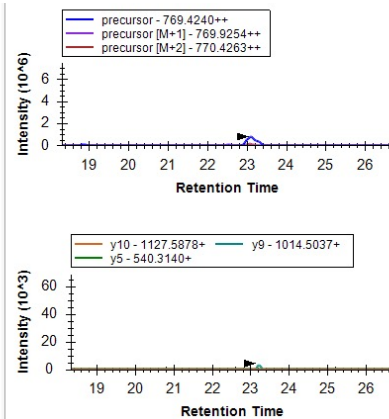
4. *cryaa* mutant (2nd generated)



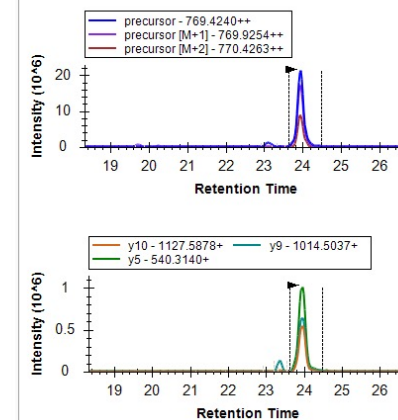
5. *cryaba* mutant lens 1



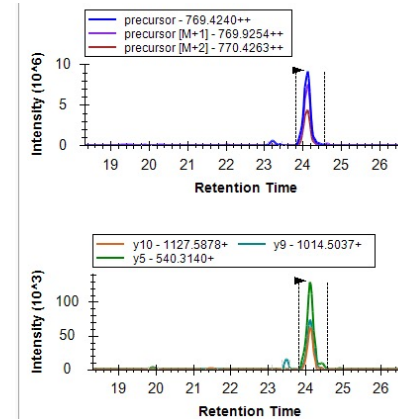
6. *cryaba* mutant lens 2



7. *cryabb* mutant lens 1

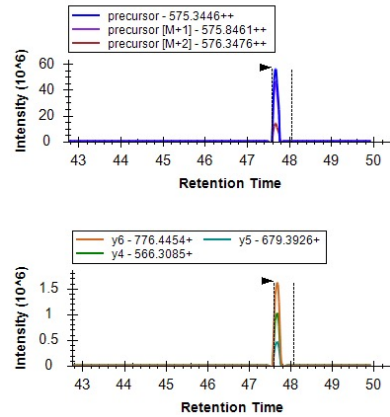


8. *cryabb* mutant lens 2

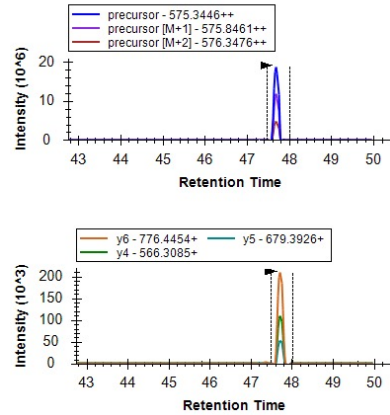


G) αBb: R.ILFPIFFPR.R [12, 20]

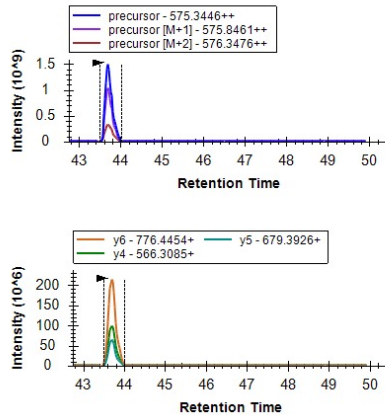
1. Wild-type lens 1



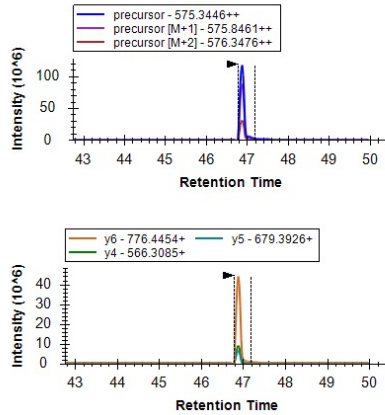
2. Wild-type lens 2



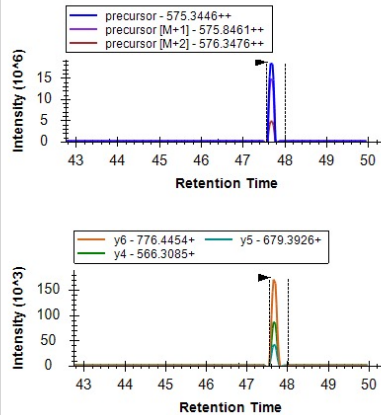
3. *cryaa* mutant (1st generated)



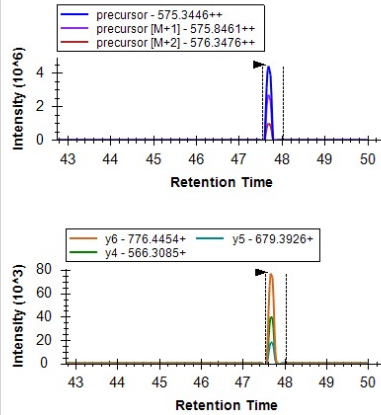
4. *cryaa* mutant (2nd generated)



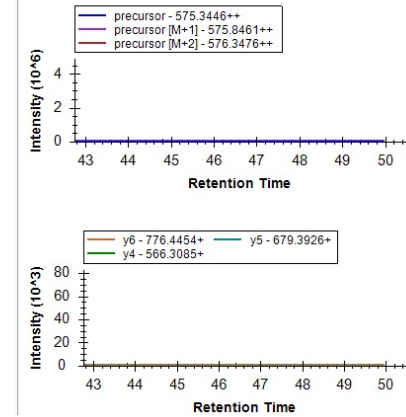
5. *cryaba* mutant lens 1



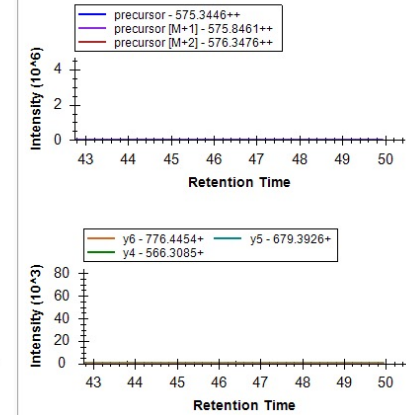
6. *cryaba* mutant lens 2



7: *cryabb* mutant lens 1

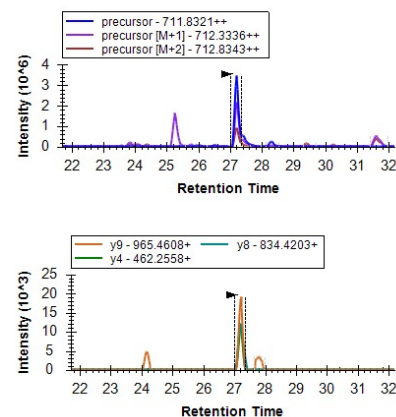


8: *cryabb* mutant lens 2

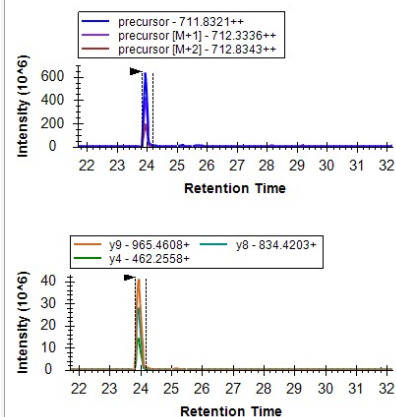


H) α Bb: R.SPSWMESGVSEVK.M [46, 58]

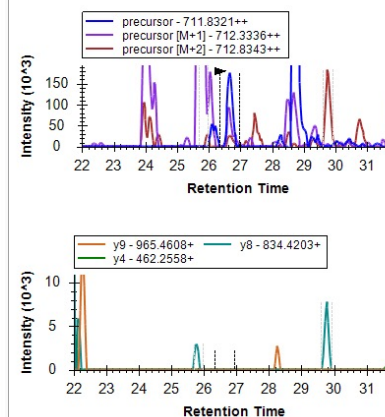
1. Wild-type lens 1



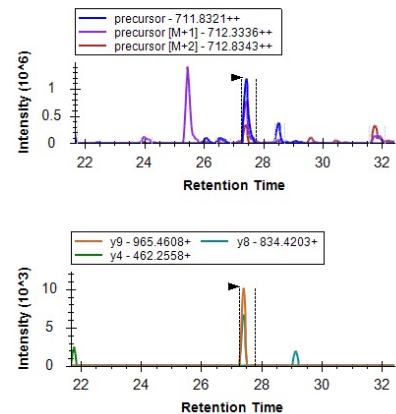
3. *cryaa* mutant (1st generated) 5. *cryaba* mutant lens 1



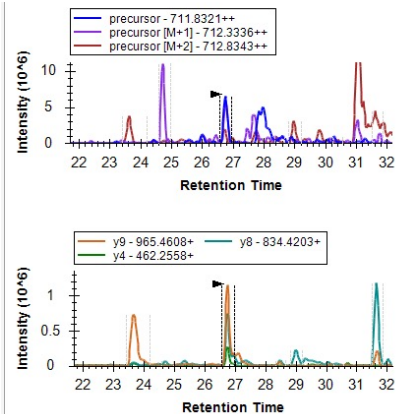
7: *cryabb* mutant lens 1



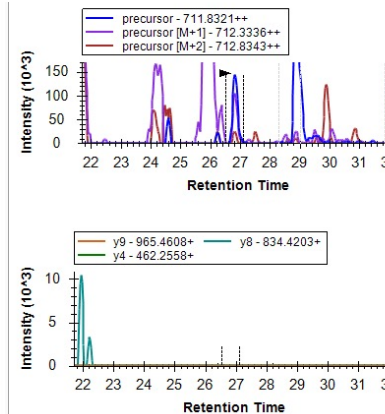
2. Wild-type lens 2



4. *cryaa* mutant (2nd generated) 6. *cryaba* mutant lens 2

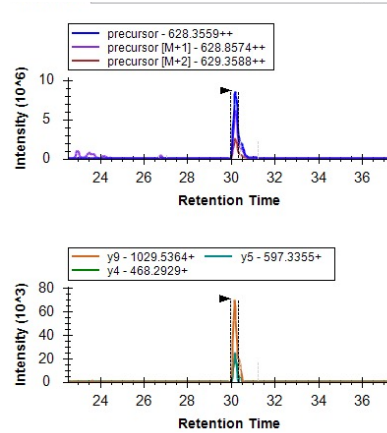


8: *cryabb* mutant lens 2

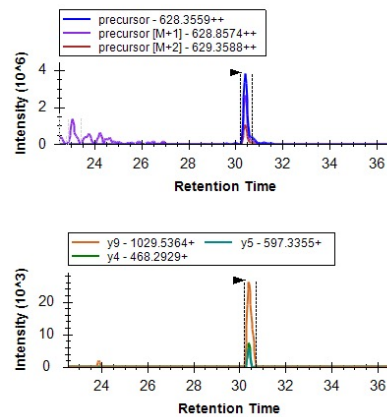


I) α Bb: K.IIGDFIEIHAK.H [82, 92]

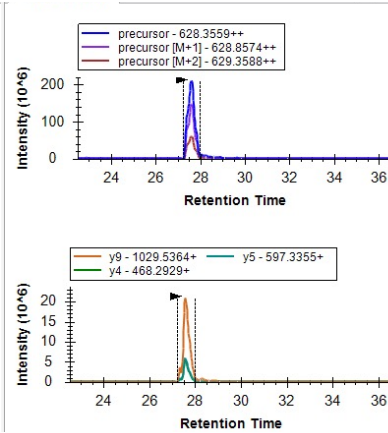
1. Wild-type lens 1



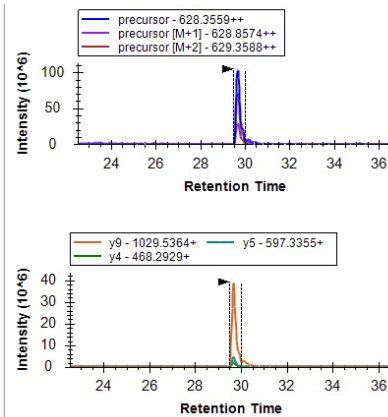
2. Wild-type lens 2



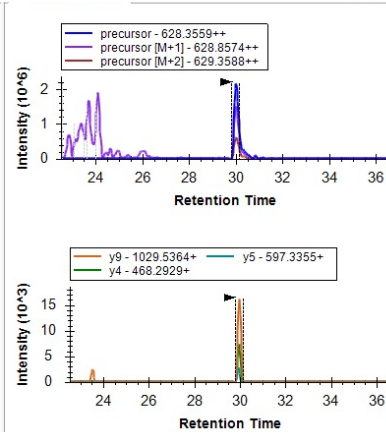
3. *cryaa* mutant (1st generated)



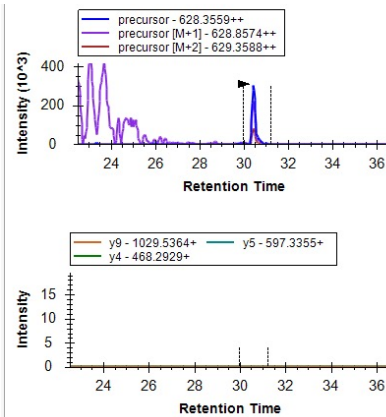
4. *cryaa* mutant (2nd generated)



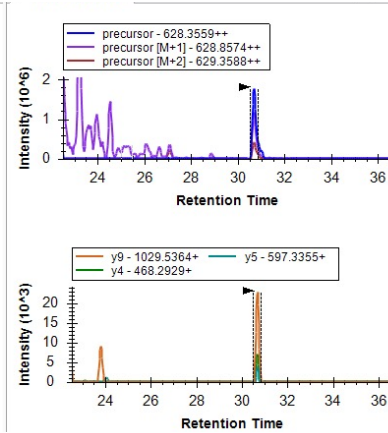
5. *cryaba* mutant lens 1



6. *cryaba* mutant lens 2



7: *cryabb* mutant lens 1



8: *cryabb* mutant lens 2

