

Supplementary materials

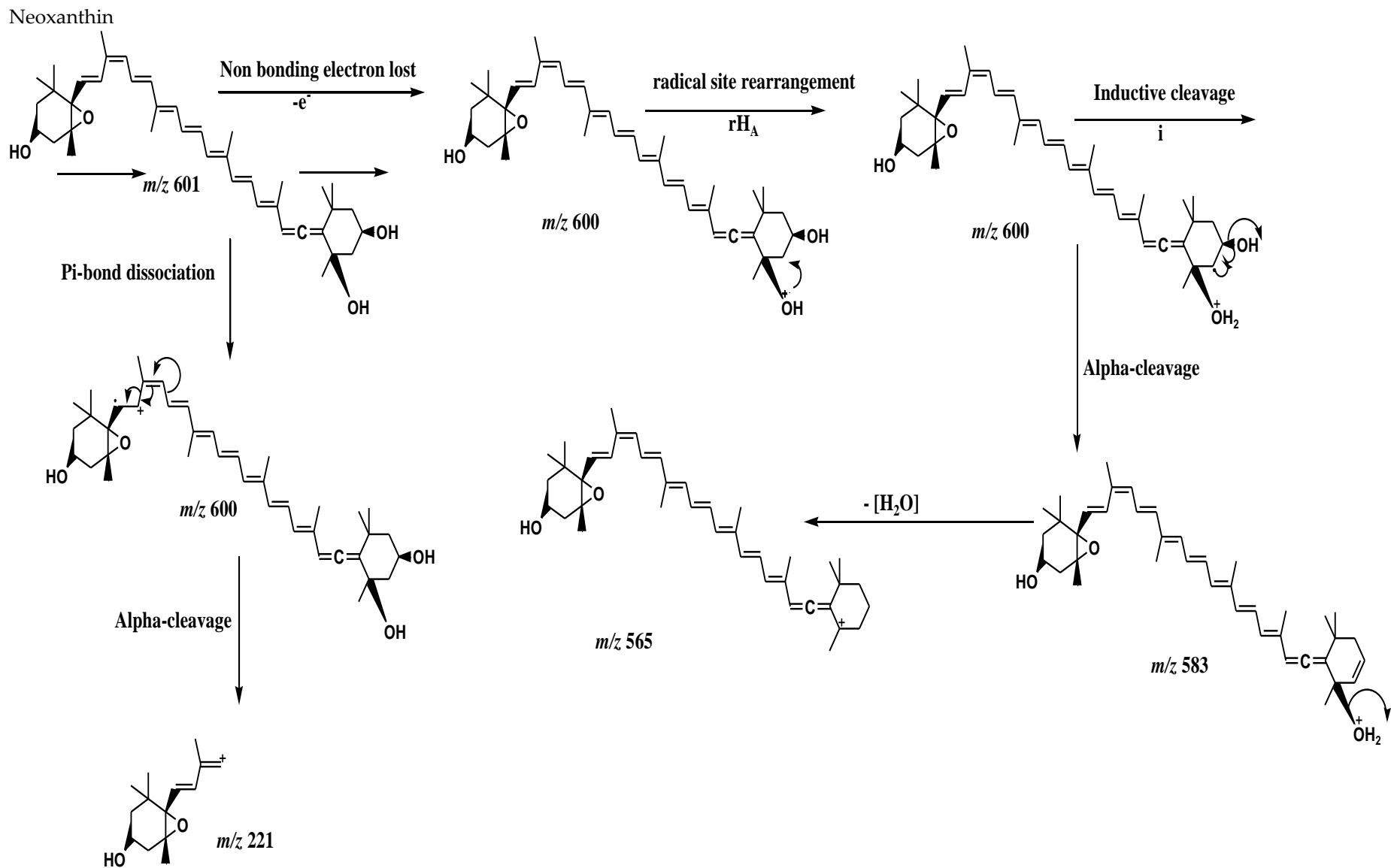


Figure S1: fragmentation pathway of neoxanthin

Violaxanthin

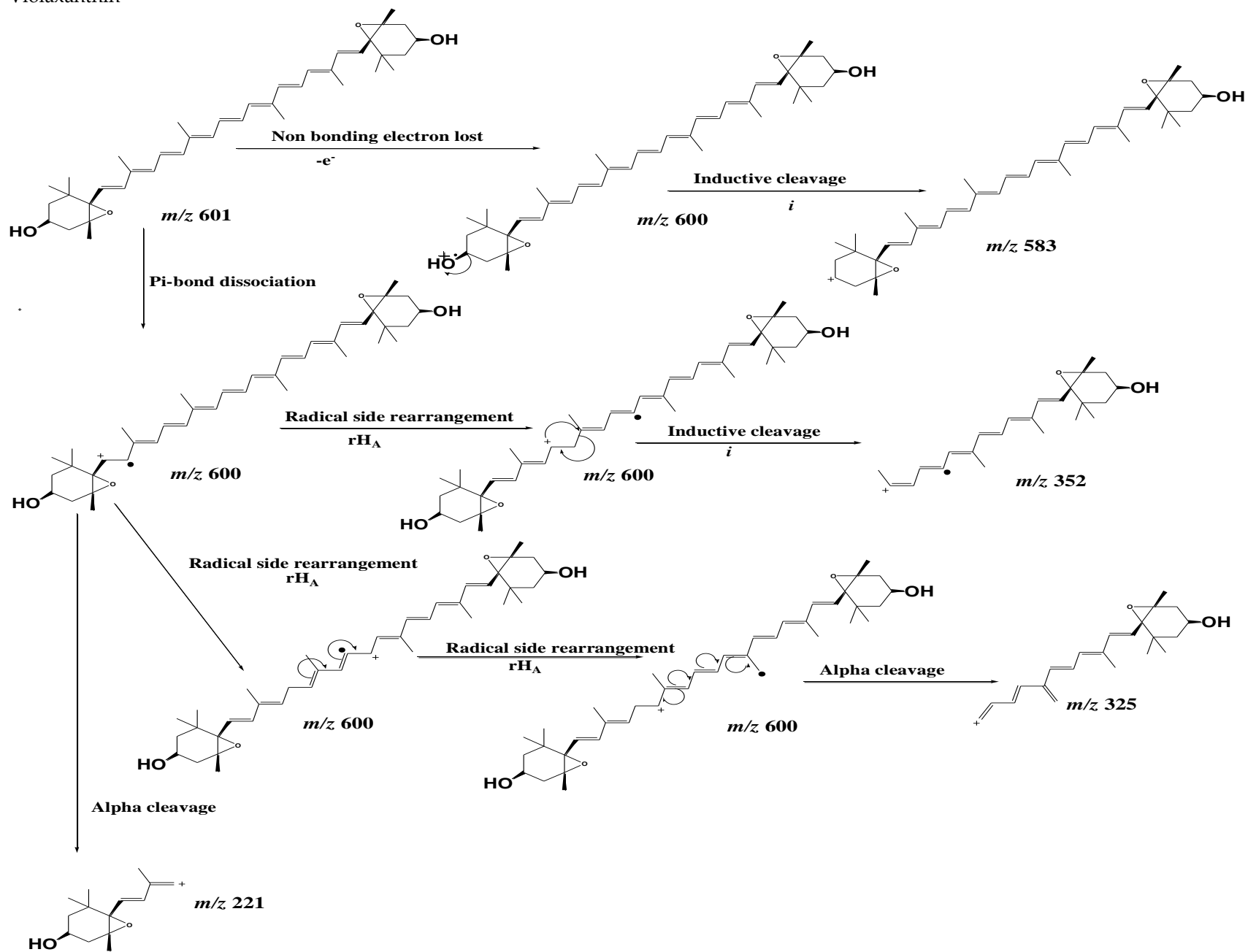


Figure S2: fragmentation pathway of violaxanthin

Lutein

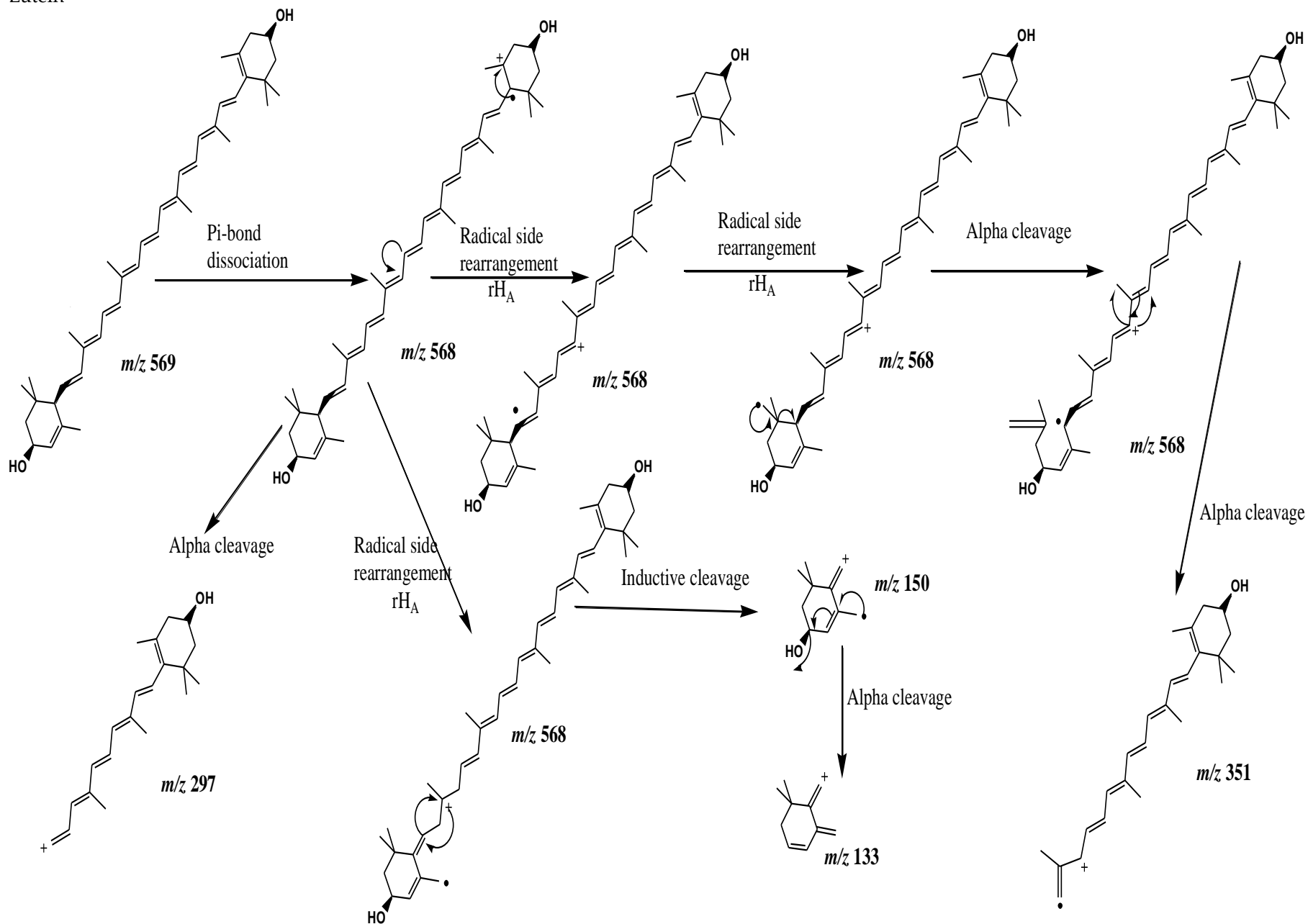


Figure S3: fragmentation pathway of lutein

β -carotene

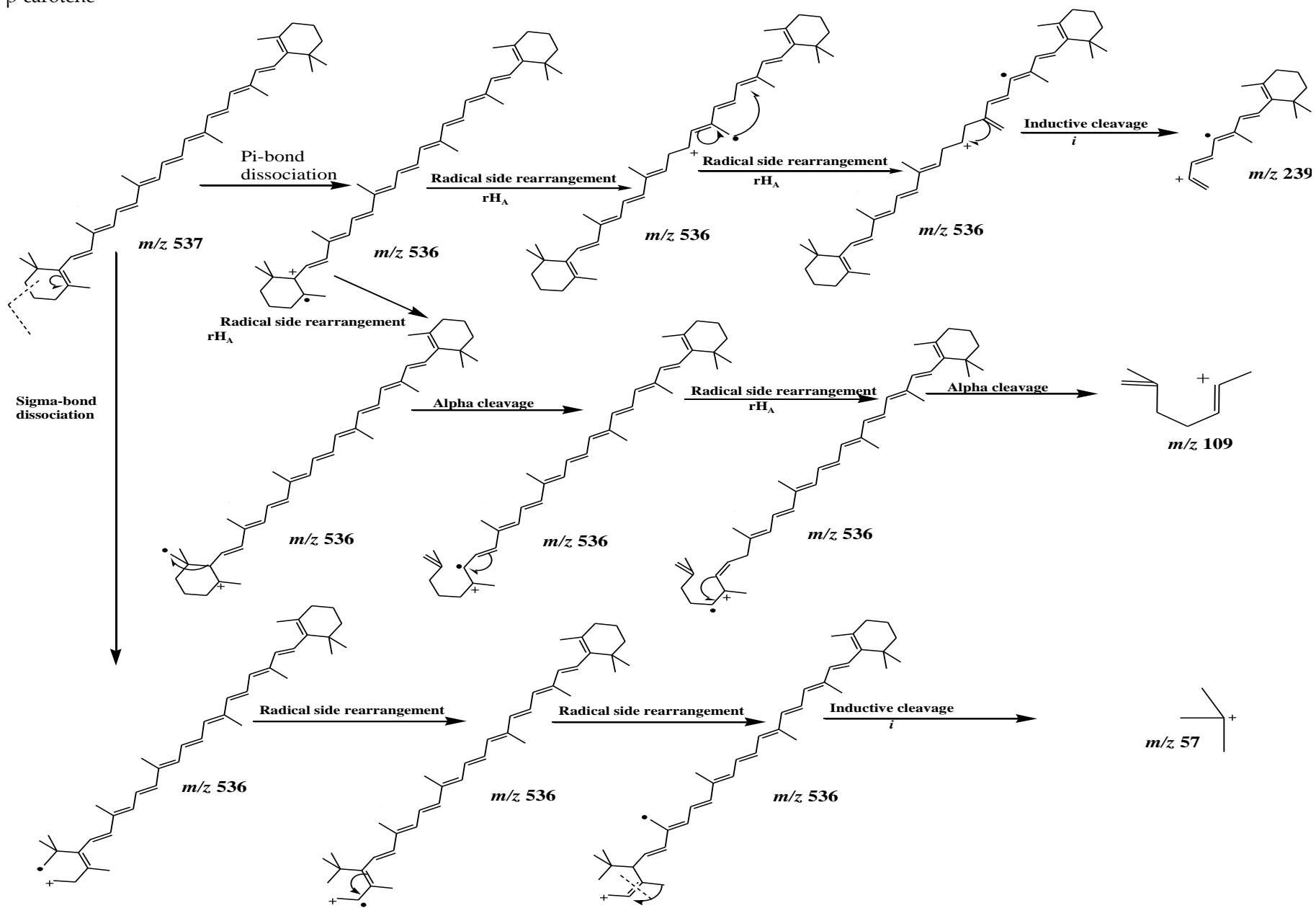


Figure S4: fragmentation pathway of β -carotene

Astaxanthin

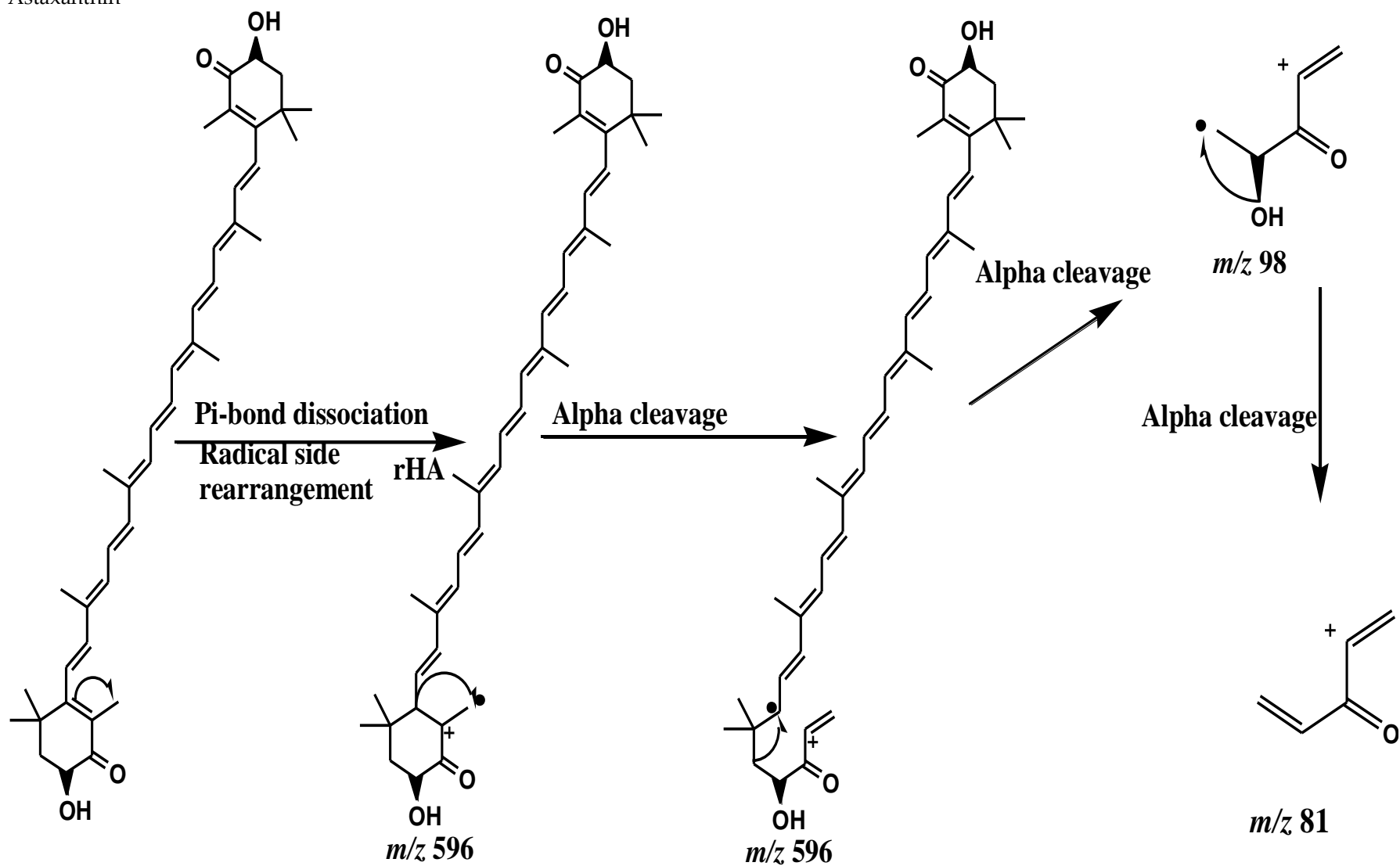


Figure S5: fragmentation pathway of astaxanthin

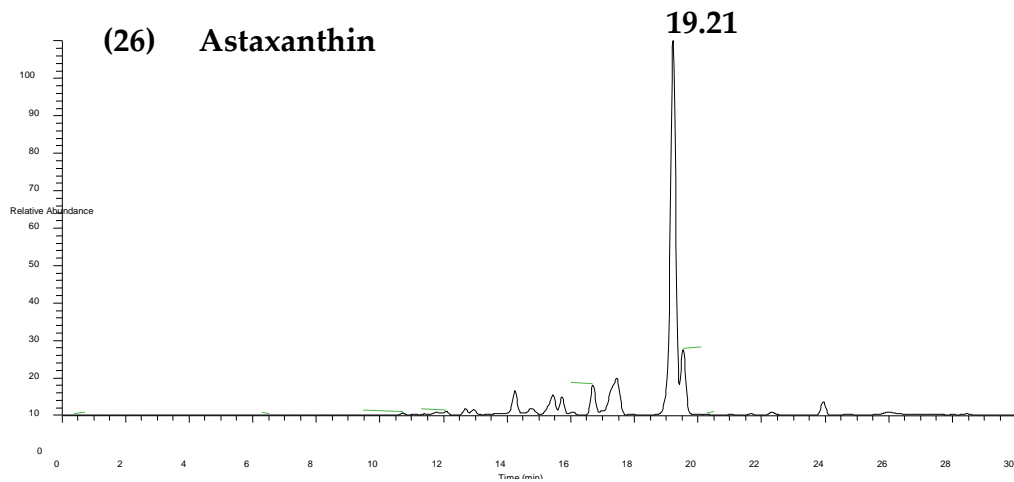
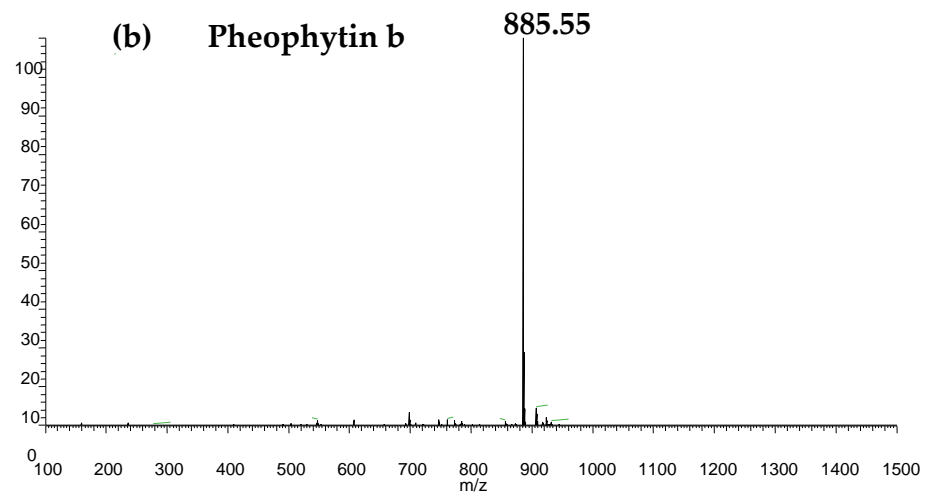
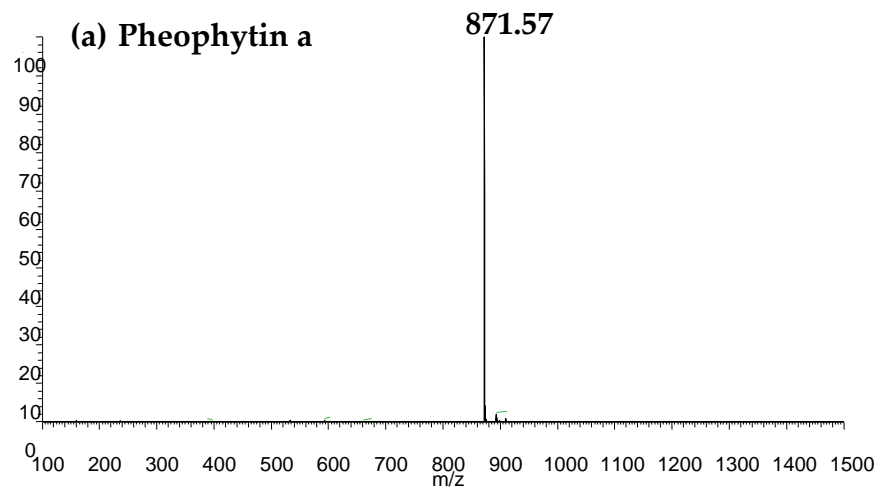


Figure S6: Extraction ion chromatogram (EIC) of (peak 26) Astaxanthin



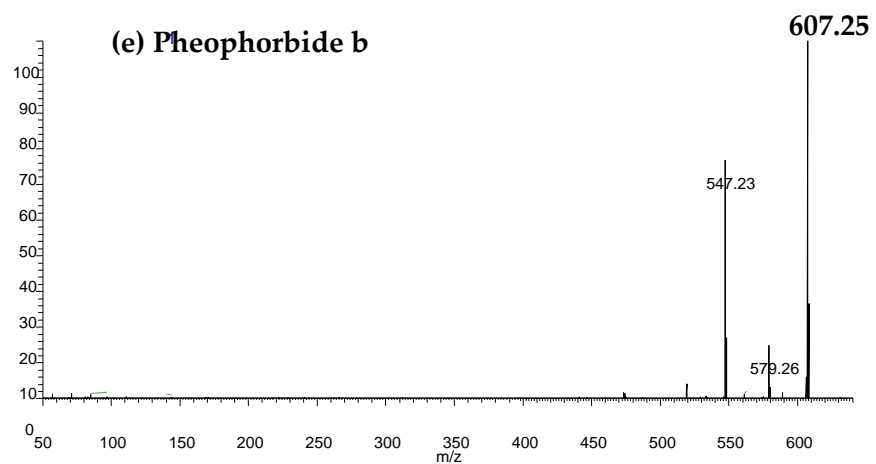
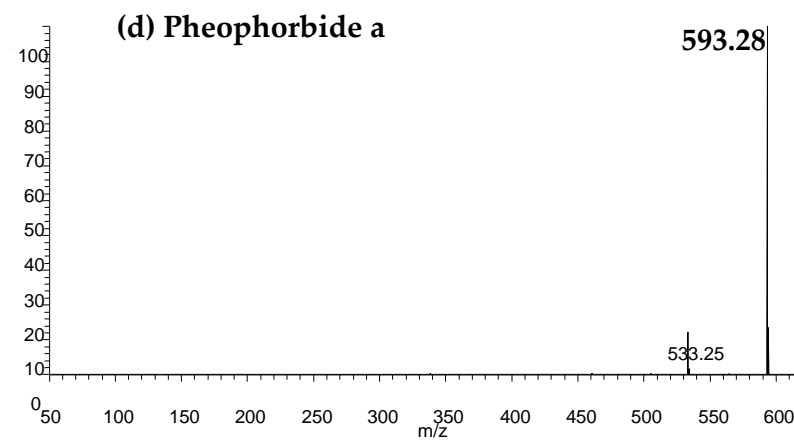
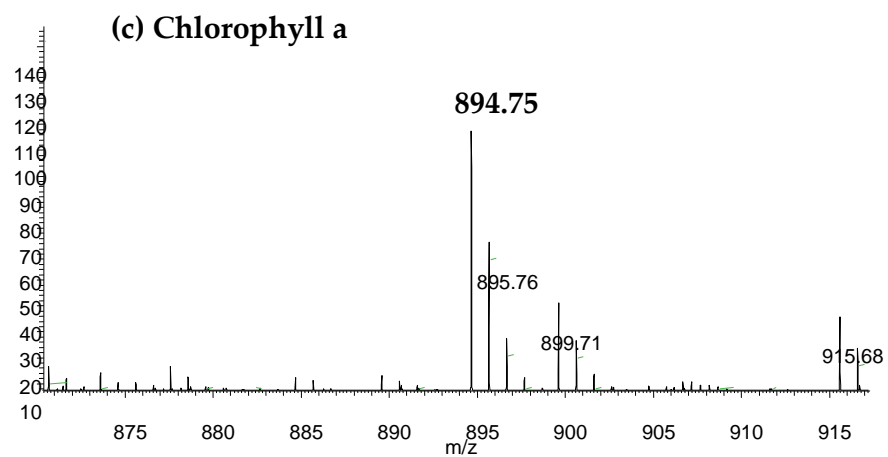


Figure S7: MS/MS of some of the representative pigments: a, pheophytin a; b, pheophytin b; c, chlorophyll a; d, pheophorbide a; e, pheophorbide b.