

Candidate genes involved in biosynthesis and degradation of the main extracellular matrix polysaccharides of brown algae and their probable evolutionary history

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Supplementary Table S1. Gene number of a selection of GT families in brown algae and other relevant organisms and known to contain FucT activities in the CAZy database.

All known FucTs are classified in the CAZy GT families as shown. The generated glycosidic linkages identified from characterized enzymes (outside brown algae) are indicated. The average value is shown for the following species: *Ectocarpus* sp.7, *Pylaiella littoralis*, *Chordaria linearis* (Ectocarpales), *Saccharina latissima*, *Saccharina japonica*, *Macrocystis pyrifera* (Laminariales), *Porterinema fluviatiles* (Ralfsiales), *Ascophyllum nodosum*, *Fucus serratus*, *Fucus distichus* (Fuciales), *Saccorhiza dermatodea*, *Saccorhiza polyschides* (Tilopteridiales), *Desmarestia herbacea*, *Desmarestia dudresnayi* (Desmarestiales), *Sphacelaria rigidula* (Sphacelariales), *Dictyota dichotoma* (Dictyotales), *Discosporangium mesarthrocarpum*, *Choristocarpus tenellus* (Discosporangiales), *Schizocladia ischiensis* (Schizocladiphyceae), *Heterosigma akashiwo* (Raphidophyceae), *Phaeodactylum tricornutum* CCAP 1055, *Thalassiosira pseudonana* CCMP 1335, *Chaetoceros tenuissimus* NIES-3715_426638 (diatoms), *Lytechinus variegatus* NC3_7654, *Strongylocentrotus purpuratus* Spur-01_7668 (sea urchin), *Apostichopus japon* Shaxun_307972 (sea cucumber). ND. Not determined.

GT families	GT10	GT23	GT41	GT74	GT11	GT37	GT65	GT68
Known FucT activities in CAZy	α -1,3/4-FucTs	α -1,6-FucTs	protein O-FucTs	α -1,2-FucTs	α -1,2/3-FucTs	α -1,2-FucTs	protein O-FucTs	protein O-FucTs
Phaeophyceae								
Ectocarpales [3]	1	9	12	1	0	0	0	0
Laminariales [3]	1	9	9	1	0	0	0	0
Ralfsiales [1]	3	7	11	1	0	0	0	0
Fuciales [3]	1	14	10	1	0	0	0	0
Tilopteridiales [2]	0	5	10	2	0	1	0	0
Desmarestiales [2]	1	11	15	1	0	1	0	0
Sphacelariales [1]	0	1	6	1	0	0	0	0
Dictyotales [1]	1	4	9	1	0	1	0	0
Discosporangiales [2]	1	1	5	1	0	1	0	0
Sister groups to Phaeophyceae								
Schizocladiphyceae [1]	1	6	11	1	0	1	0	0
Raphidophyceae [1]	0	0	8	0	0	0	0	0
Other Stramenopiles								
diatoms [3]	3	0	2	1	ND	ND	ND	ND
Echinoderms								
Sea urchin [2]	60	7	4	0	ND	ND	ND	ND
Sea cucumber [1]	97	1	1	0	ND	ND	ND	ND