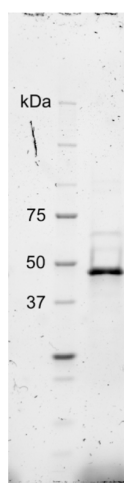


**Figure S1.** Agarose gel electrophoresis of 16S rRNA gene, amplified with universal fD1 and rP2 primers. GeneRuler 1 kb DNA Ladder (Thermo Fisher Scientific) was used as the ladder.



**Figure S2.** M/Lam17B purity and integrity determination with SDS-PAGE. Precision Plus Protein Dual Color Standards (Bio-Rad) molecular-mass marker was used to estimate the molecular weight of protein.

**Table S1.** Composition analysis of *Alaria esculenta* after lyophilization and acid hydrolysis.

Carbohydrate composition (% DW)								
Mannitol	Fucose	Galactose	Glucose	Xylose	Mannose	Mannuronic acids	Guluronic acids	Glucuronic acid
6.02 ± 0.11	1.7 ± 0.01	1.0 ± 0.03	2.91 ± 0.1	0.3 ± 0.01	0.41 ± 0.01	7.98 ± 1.14	7.72 ± 1.38	0.86 ± 0.1