Table S4. The similarities of amino acid (aa) sequence of ulvan metabolic enzymes of QB4 in PDB database.

Name Description (PDB ID) aa sequence

 similarity (%)

Gd1\_GH1β-glucosidase A, *Hungateiclostridium thermocellum* 63.23

 (5OGZ) ATCC 27405

Gu1Glucokinase (Glk), *Escherichia coli* (1Q18) 66.56

Gu2Glucose-6-phosphate Isomerase, *Escherichia coli* (3NBU) 71.80