

Supplementary Materials

***In vitro* prebiotic and anti-colon cancer activity of agar-derived sugars from red seaweeds**

Eun Ju Yun^{1,2,†}, Sora Yu^{1,†}, Young-Ah Kim³, Jing-Jing Liu^{2,4}, Nam Joo Kang³, Yong-Su Jin^{2,4,*}, and Kyoung Heon Kim^{1,*}

¹Department of Biotechnology, Graduate School, Korea University, Seoul 02841, Republic of Korea

²Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, USA

³School of Food Science and Biotechnology, Kyungpook National University, Daegu 41566, Republic of Korea

⁴Department of Food Science and Human Nutrition, University of Illinois at Urbana-Champaign, Urbana, Illinois 61801, USA

†These authors contributed equally to this work.

*Correspondence: khekim@korea.ac.kr (K.H.K.); ysjin@illinois.edu (Y.S.J.)

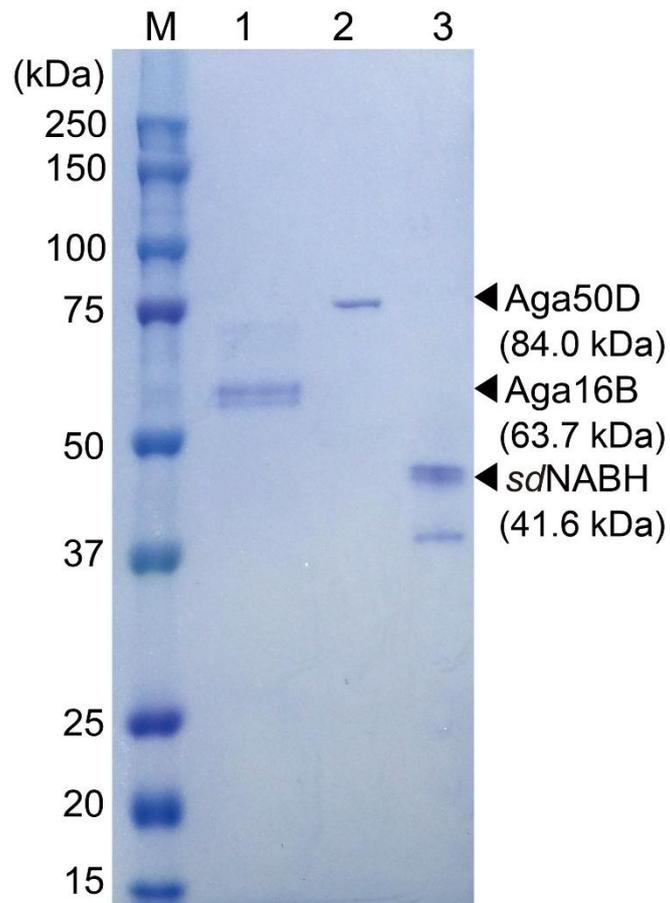


Figure S1. Sodium dodecyl sulfate–polyacrylamide gel electrophoresis analysis of the purified recombinant proteins of Aga16B, Aga50D, and SdNABH. Lanes: M, protein markers; 1–3, (1) Aga16B, (2) Aga50D, and (3) SdNABH purified by His-tag affinity chromatography.

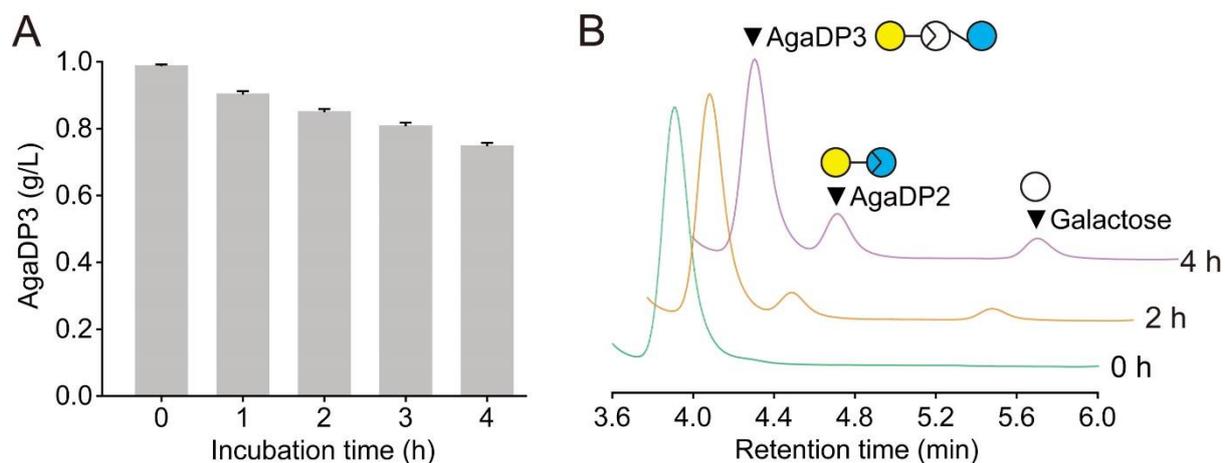


Figure S2. Stability test of AgaDP3 in the presence of simulated gastric fluid. **(A)** AgaDP3 was incubated with simulated gastric fluid comprising 0.2% (w/v) sodium chloride in 0.7% (v/v) hydrochloric acid at 37°C for 3 h. The concentration of AgaDP3 was monitored using HPLC. **(B)** Overlaid HPLC chromatograms profiling the partial degradation of AgaDP3 during incubation.

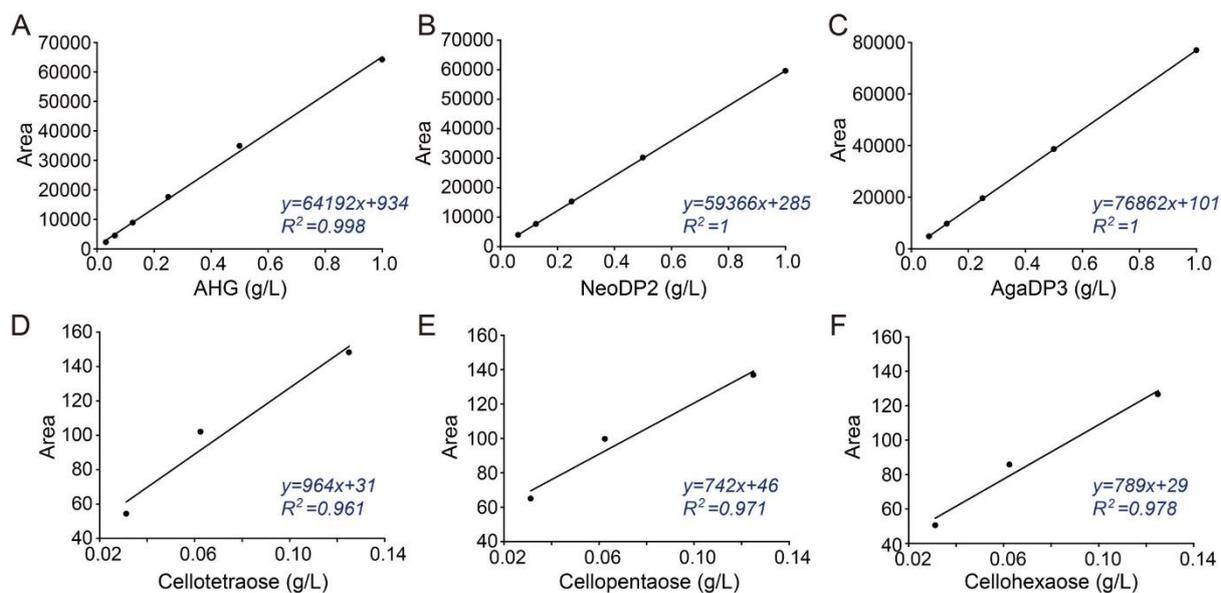


Figure S3. Calibration curves of purified agar-derived sugars produced from agarose by the enzymatic reactions of Aga16B, Aga50D, and SdNABH. **(A–C)** Calibration curves of AHG, NeoDP2, and AgaDP3 for quantitative analyses by HPLC. **(D–F)** Calibration curves for cellotetraose, cellopentaose, and cellohexaose for quantitative analyses of NeoDP4, AgaDP5, and NeoDP6, respectively, by HPAEC-PAD.