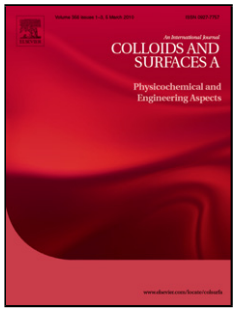

Title: Phenylboronic Acid-Modified Oligoamine Sensitive to Monosaccharides and Carbon Dioxide under Physiological Conditions

Authors: Vincent S. Joseph, Jong-Dal Hong

PII: S0927-7757(18)30462-X
DOI: https://doi.org/10.1016/j.colsurfa.2018.05.084
Reference: COLSUA 22552

To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 13-3-2018
Revised date: 27-5-2018
Accepted date: 28-5-2018

Please cite this article as: Joseph VS, Hong J-Dal, Phenylboronic Acid-Modified Oligoamine Sensitive to Monosaccharides and Carbon Dioxide under Physiological Conditions, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* (2018), https://doi.org/10.1016/j.colsurfa.2018.05.084

Phenylboronic Acid-Modified Oligoamine Sensitive to Monosaccharides and Carbon Dioxide under Physiological Conditions

Vincent S. Joseph , Jong-Dal Hong*

Department of Chemistry, Research Institute of Basic Sciences, Incheon National University, 119 Academy-roYeonsu-gu, Incheon 22012, Republic of Korea.

∗ Corresponding author. Tel.: 82-32-835-8234; Fax: 82-32-835-0762.
E-mail address: hong5506@inu.ac.kr

Graphical abstract

Dual stimuli-responsive receptor OAB showed excellent responsiveness to major endogenous metabolites, specifically carbon dioxide (CO_2) and monosaccharides glucose and fructose. The reversible complexation of the receptor with was controlled over time through slow bubbling of CO_2 and then nitrogen (N_2) into the solution. The receptor displayed strong binding to glucose (binding constant K_{eq} = 5.8 M^{-1}) and fructose (K_{eq} = 73.4 M^{-1}) at the physiological pH 7.4, respectively.