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GLYCOSYLATED FLUORESCENT PROBE IMMOBILIZED MICROARRAYS FOR PROFILING GLYCOSIDASE ACTIVITIES

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Cellular glycans in the form of glycoconjugates are generated by action of glycosyltransferases and glycosidases. Owing to biological and pathological significance of glycosidases, it is highly demanded to develop simple and sensitive methods to profile their catalytic activities. For this purpose, carbohydrate microarrays containing fluorescent probe-conjugated glycans were prepared by immobilizing glycosylated near-infrared (NIR) fluorescent probes containing hydrazide appendages on epoxide-modified glass slides using an automatic pin-type microarrayer. Several glycosidases were applied to the glycan microarrays and the fluorescence intensities arising from cleavage of a sugar moiety from glycosylated near-infrared (NIR) fluorescent probes were measured by using a microarray scanner. The results of microarray experiments revealed that carbohydrate microarrays immobilized by glycosylated NIR probes are highly useful for profiling glycosidase activities and determination of IC50 values of glycosidase inhibitors.

Biography

Ji Young Hyun has received her BS degree in Chemistry in 2013 from Yonsei University. She began her PhD with Professor Injae Shin of Yonsei University in 2013. Her current research interests include Functional Studies of Glycans using Synthetic Carbohydrates and Glycan Microarrays.

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