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UPDATES FROM THE CUTTING EDGE

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Life Science & Technology

Molecularly Imprinted Polymer Membranes with Photoregulated Template Binding

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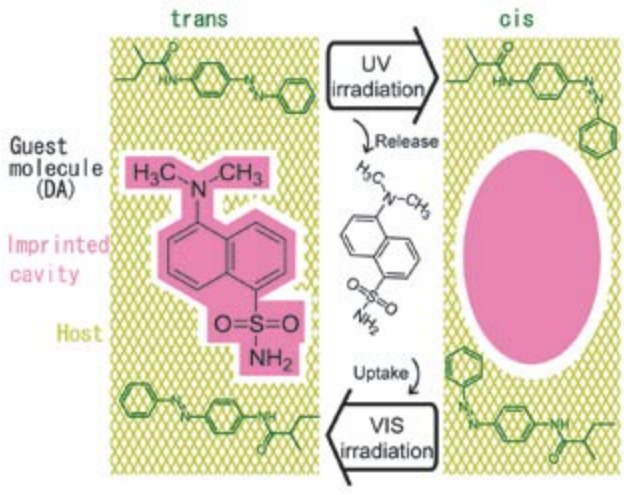
Selective, stable, molecularly imprinted polymers having intrinsic photoresponsive properties were synthesized for the purpose of photoregulated binding of a predetermined ligand. For synthesizing molecularly imprinted polymers, p-phenylazoacrylanilide (PhAAAn) was used as a new photoresponsive functional monomer. Highly cross-linked, free-standing, polymer membranes were synthesized. A study of the kinetics of photoisomerization of PhAAAn within the polymer membranes showed the excellent functional stability of the membranes. Polymer membranes synthesized in the presence of the template dansylamide possess selective sites for recognizing dansylamide, and the affinity of these sites can be reversibly changed by illumination with ultraviolet or visible light.



Release/uptake of guest molecule(DA) accompanied by deformation of imprinted cavity upon photo-irradiation