

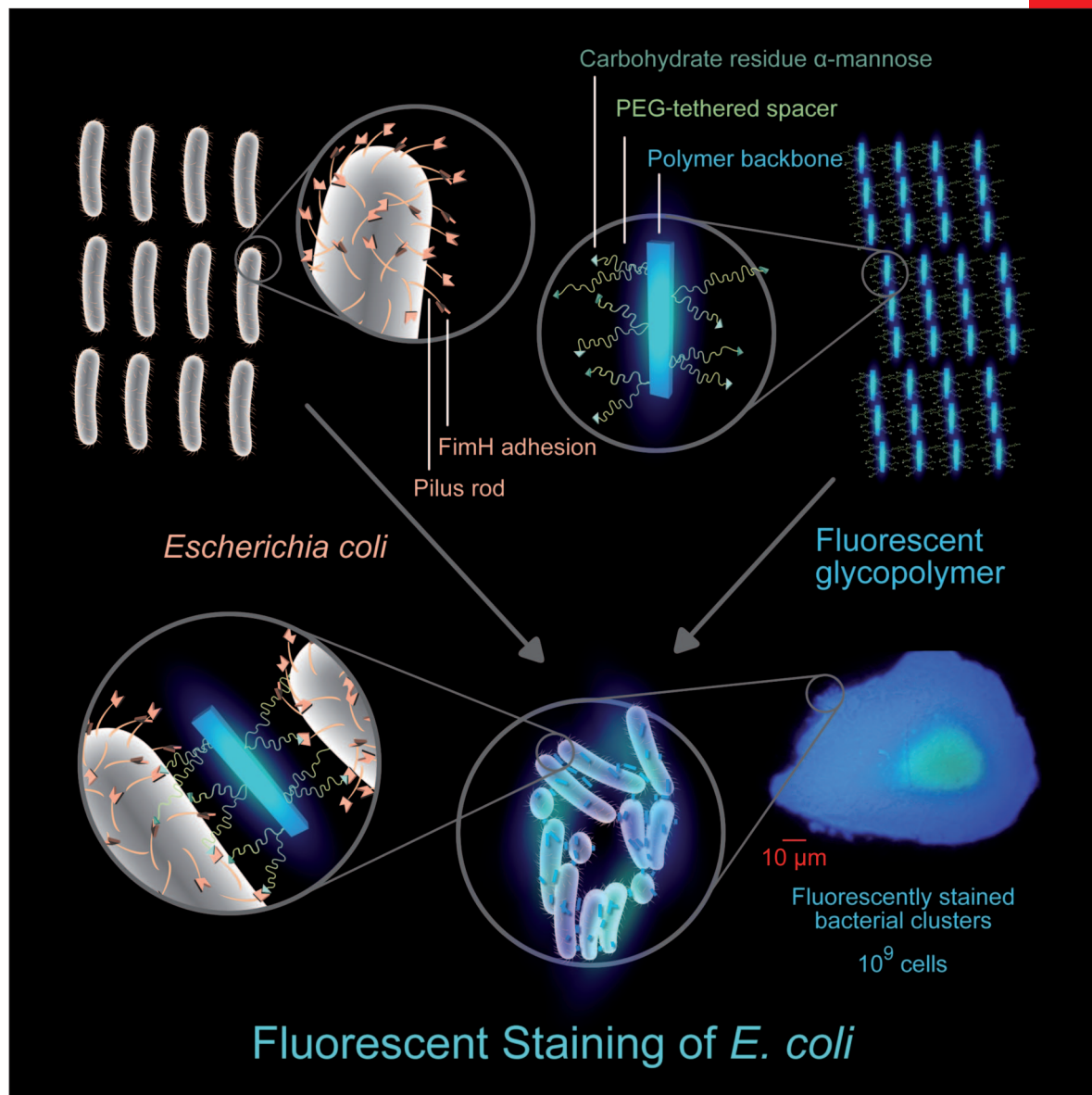
CHEMISTRY

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Concept

Beyond Molecular Beacons: Optical Sensors Based
on the Binding-Induced Folding of Proteins and Polypeptides
K. W. Plaxco et al.

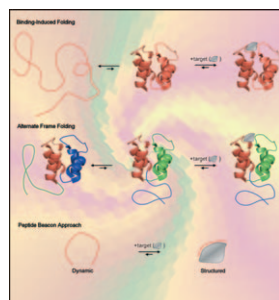
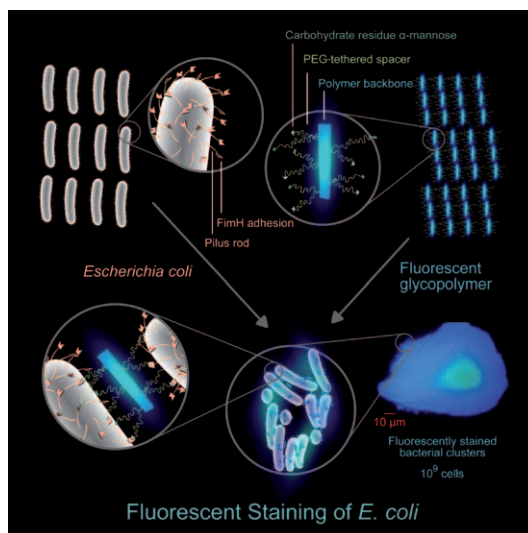
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... is of the utmost importance in the food industry, water and environmental quality control, and clinical diagnosis for health and safety reasons. In their Full Paper on page 2289 ff., H. Liu et al. describe glycopolymers, with the use of poly(ethylene glycol), as glycoside-tethered spacers that offer the sensitive detection of *E. coli*, as a result of the significantly reduced steric binding hindrance of the polymeric carbohydrates to the bacterial pili.

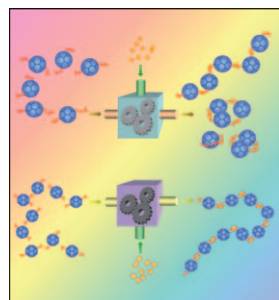
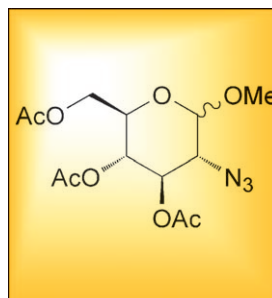


Molecular Beacons

In their Concept article on page 2244 ff., K. W. Plaxco et al. describe how binding-induced folding appears to be a fairly general signal-transduction mechanism for polypeptide-based biosensors. The criteria for choosing a suitable target/ligand system merely requires that target binding can be used to segregate an optical reporter pair by at least a few angstroms, and that the reporting group pair does not disrupt target binding.

α- and β-Glycosyl Sulfonium Ions

Both α- and β-glycosyl sulfonium ions were successfully produced from an electrochemically generated glycosyl triflate and were characterized by NMR spectroscopy and mass spectrometry. The time-course NMR study for the reaction with MeOH clearly revealed that the α-glycosyl sulfonium ion is more reactive than the β-glycosyl sulfonium ion. Details of these studies are given in the Communication by S. Manabe, J. Yoshida et al. on page 2252 ff.



Polymerization

In their Full Paper on page 2278 ff., H.-F. Chow et al. discuss cyclization versus propagation in the synthesis of organometallic poly(dendrimer)s. The copolymerization behavior of a dendritic macromonomer with a metal-containing linker is controlled by the dendrimer size and its structural rigidity. Hence, structurally flexible dendritic monomers tend to form more cyclic oligomers, whereas structurally rigid dendritic monomers prefer to form linear poly(dendrimer)s.

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