



Abstract

In Situ Biosensing of Cancer-Related Cellular Biomolecules [†]

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Cancer-related cellular biomolecules have been regarded as attractive targets for biomedical research, molecular diagnostics and cancer therapy. Our recent efforts have been devoted to in situ analysis and highly selective detection of various cancer-related cellular biomolecules and precise near-infrared cancer therapy. Some research results in in situ biosensing of cancer-related cellular biomolecules with different detection techniques, including electrochemical, chemiluminescent, scanometric, fluorescent, Raman and mass spectroscopic imaging have been published. These cellular biomolecules include glycans [1] and protein-specific glycans [2] on living cell surfaces, intracellular microRNA [3], sialyltransferase and lysosomal neuraminidase [4], telomerase [5], ATP and caspases [6]. Some nanoprobes designed for real-time targeted imaging and precise near-infrared therapy against cancer are also discussed [7,8].

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