

Advances in Protein Recognition Using Bio-Inspired Polynorepinephrine and Novel Imprinting Strategies

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The search for ethical and sustainable alternatives to antibodies has led to bio-inspired polymers mimicking molecular recognition. Despite progress in antibody engineering, conventional immunoassays remain costly, unstable, and animal-dependent. In contrast, neurotransmitter-based receptors—like dopamine, norepinephrine, and serotonin—allow eco-friendly, one-step synthesis of Molecularly Imprinted Bio-Polymers (MIBPs). We present advances in polynorepinephrine-based MIPs (MIPNEs), including a novel “finger-imprinting” strategy using biological extracts and an automated method for epitope selection. These innovations offer robust, selective, and affordable tools for protein detection in diagnostics and personalized medicine

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