Ligand-Directed Targeting and Molecular Imaging Based on In Vivo Phage Display

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Systematic implementation of *in vivo* phage display enables subsequent identification of tissue-specific receptors to generate a comprehensive map of molecular markers in each organ or tissue, and reveals mechanistic insights related to disease-specific protein biomarkers. Translational applications of our research include 2 FDA-approved investigational new drugs in phase 1 clinical trials. Recent updates on ligand-directed targeting of multiple payloads such as cytotoxics, gene therapy vectors, nanoparticles, and imaging agents will be discussed.