



# Chemoselective Transformations for Bioimaging and Targeted Therapeutics

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## ABSTRACT

Covalent protein modification is a key instrument in Chemical Biology: attachment of biophysical probes enable protein tracking and imaging; attachment of lipids to small therapeutic peptides extends their half-life in circulation; and protein conjugates are important biologic targets for the treatment of human diseases. In addition, proteins are modified after translation, increasingly significantly their structural complexity and functional capability. The use of efficient, complete, chemo- & regioselective methods in benign aqueous systems offers ways to redesign the structure and function of proteins of biological and therapeutic interest.

This abstract features examples of (a) precise and controlled methods for site-specific protein labeling *in vitro*<sup>[1,2]</sup>; (b) development of chemically-defined, traceless therapeutic proteins for cancer therapy<sup>[3-5]</sup> and (c) controlled delivery of therapeutic CO using chemically-defined carbonyl metalloproteins<sup>[6-8]</sup>.

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