

## How do you write chemoselectivity? Of course with a P!

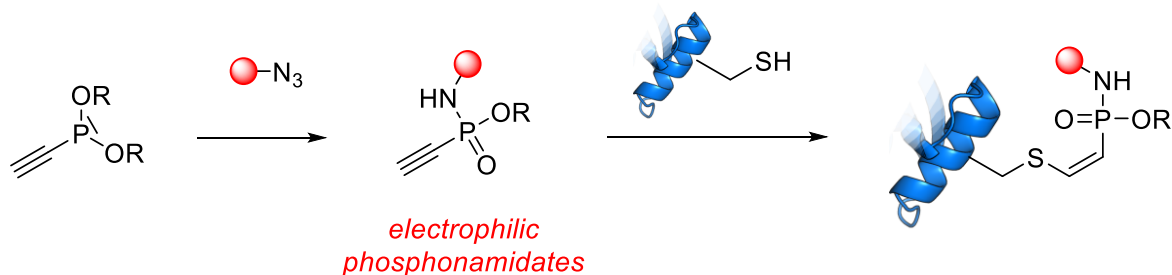
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Our lab aims to identify highly selective chemical reactions for the synthesis and modification of functional peptides and proteins.[1] We apply these so-called bioorthogonal reactions to study functional consequences of naturally occurring posttranslational protein modifications (PTMs), in particular phosphorylated Lys- and Cystein-peptides and proteins,[2] as well as to generate novel protein- and antibody-conjugates for pharmaceutical and medicinal applications.[1a,3]

In this presentation, I will focus on our most recent chemical development of Cys-selective P(V)-reagents including unsaturated phosphonamidates, [4, see Scheme], phosphonothiolates[5] and phosphinates[6]. We applied these reactions in a so-called **P5-labeling protocol** for the generation of new antibody-drug conjugates (ADCs)[3] and for the development of cell-permeable proteins [7]. With these next-generation drug conjugates, we show an improved efficacy compared to clinically approved cancer therapeutics on the market for the targeted delivery of pharmaceuticals.



### References

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