

Next generation bioconjugates for intra- and extracellular targetingC.P.R. Hackenberger, Berlin/D

Prof. Dr. Christian P. R. Hackenberger, Humboldt Universität zu Berlin and
Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP) Robert-Rössle-Str. 10,
13125 Berlin, Germany
Email: hackenbe@fmp-berlin.de,
www.fmp-berlin.info/hackenbe, Twitter: @PhosphorusFive

In this presentation, I will focus on the chemical modification of functional proteins for pharmaceutical and medicinal applications.^[1] In my laboratory, we use a combined approach of recently developed chemoselective reactions and enzymatic ligations, for instance the so-called P5- or Tub-tag®-labeling,^[2,3] for bioconjugation. By generating stable antibody-drug conjugates (ADCs),^[3] structurally defined multivalent scaffolds^[4] or cell-permeable antibodies via conjugating cyclic cell-penetrating peptides,^[5] we provide new modalities for most challenging pharmaceutical targets, including next generation cancer therapeutics or novel inhibitors against viral infections.

References

- [1] D. Schumacher, C.P.R. Hackenberger, *Curr. Opin. Chem. Biol.* **2014**, 22, 62-69.
- [2] a) M.-A. Kasper et al., *Angew. Chem. Int. Ed.* **2019**, 58, 11625-11630; b) M.-A. Kasper et al., *Angew. Chem. Int. Ed.* **2019**, 58, 11631-11636; c) M.-A. Kasper et al., *Chem Sci.* **2019**, 10, 6322-6329; d) C.E. Stieger et al. *Angew. Chem. Int. Ed.* **2021**, 60, 15359-15364.
- [3] a) D. Schumacher et al., *Angew. Chem. Int. Ed.* **2015**, 54(46), 13787-13791, b) D. Schumacher et al., *Chem. Sci.* **2017**, 8, 3471-3478.
- [4] D. Lauster et al., *Nature Nanotech.* **2020**, 15, 373-379.
- [5] a) N. Nischan et al., *Angew. Chem. Int. Ed.* **2015**, 54(6), 1950-1953; b) H. Herce et al., *Nature Chem.* **2017**, 9, 762-771; c) A.F.L. Schneider et al., *Nature Chem.* **2021**, 13, 530-539.