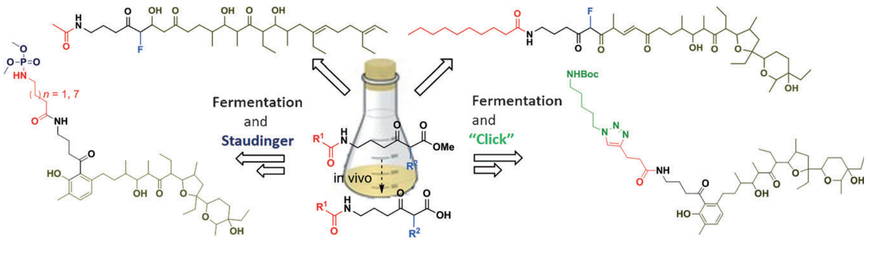
Biosynthesis

E. Riva, I. Wilkening, S. Gazzola,
W. M. A. Li, L. Smith, P. F. Leadlay,
M. Tosin* **11944 – 11949**

Chemical Probes for the Functionalization of Polyketide Intermediates

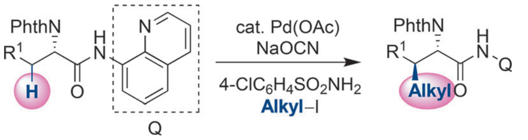


Towards novel "unnatural" products: Fermentation of ACP mutants of *S. lasaliensis* in the presence of functionalized chemical probes with subsequent site-selective modifications generates a library of nonnatural lasalocid A precursors and derivatives.

Amino Acids

K. Chen, B.-F. Shi* **11950 – 11954**

Sulfonamide-Promoted Palladium(II)-Catalyzed Alkylation of Unactivated Methylene C(sp^3)—H Bonds with Alkyl Iodides



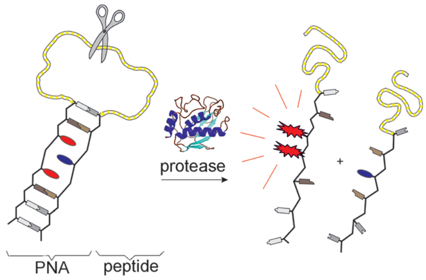
Branching off: The title reaction of unactivated β-methylene C(sp^3)—H bonds of α-amino acid substrates with alkyl iodides is described. The C(alkyl)–C(alkyl) bond-forming reaction proceeds in good yields, and β-branched amino acids can be obtained by using sequential reactions.

Fluorescence Probes

M. Fischbach, U. Resch-Genger,
O. Seitz* **11955 – 11959**

Protease Probes that Enable Excimer Signaling upon Scission

Let there be excimer light: Large Stokes shifts and the long lifetime of excimer emission facilitate measurements in optically dense, autofluorescent media such as blood serum. However, proteolytic cleavage abolishes rather than installs proximity relationships required for excimer signaling. Herein, a new approach is introduced which enables on-switching of pyrene excimer emission upon proteolytic scission of hairpin-shaped PNA-peptide probe.



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Flashback: 50 Years Ago ...

Guilio Natta, who shared the 1963 Nobel Prize for Chemistry with Karl Ziegler, published a Review on the stereospecific homopolymerization of cyclopentene. Use of $MoCl_5/Al(C_2H_5)_3$ as catalyst was found to give the *cis*-polypentenamer, whereas use of $WCl_5/Al(C_2H_5)_3$ resulted in formation of the *trans*-polypentenamer.

Rolf Huisgen et al. reported on the stereospecific addition of ketenes onto enol ethers to form 3-alkoxycyclobutanones. The *cis* or *trans* configuration of the enol ethers is retained in the product, and the reaction proceeds via a resonance-stabilized intermediate or a multistep cycloaddition, depending on the geometry of the starting materials.

Wilhelm P. Neumann et al. published two Communications on stannanes. The first report discussed the synthesis of octabenzylcyclotetrastannane, which contains a four-membered ring of tin atoms. The target product was synthesized from dibenzyltin hydride, which itself was produced in situ from dibenzyltin dichloride and ignites spontaneously on filter paper in contact with air. The second Communication was on the synthesis of organic di- and polystannanes by the condensation of organotin hydrides with organotin oxides.

Read more in Issue 11/1964.