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Minireview

Partial Agonists and Subunit Selectivity at NMDA Receptors

R. P. Clausen et al.

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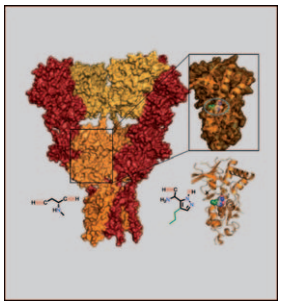
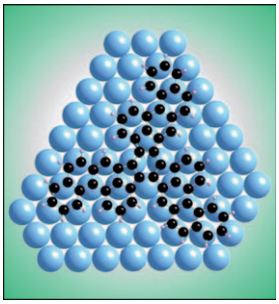
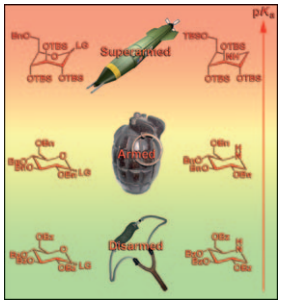
… for selective C–H oxidations with H_2O_2 is the complex [Fe(bpmen)$(CH_3CN)_2$][ClO_4]$_2$ (**1**). Until now, no intermediates have been observed in these reactions and the exact mechanism remained unclear. In their Full Paper on page 13995 ff., E. V. Rybak-Akimova and O. V. Makhlynets identified and experimentally characterized Fe^{III}(OOH) and Fe^{IV}=O intermediates formed by **1** and H_2O_2. Detailed kinetic and mechanistic studies revealed that Fe^{III}(OOH) produces the reactive oxidant in the rate-limiting, acid-assisted heterolytic cleavage of the O–O bond.



Glutamate Receptors
Development of chemical probes selectively activating subtypes of glutamate receptors is of great importance for understanding brain communication because glutamate is the most common neurotransmitter in the brain. Compounds that activate (agonists) individual *N*-methyl-D-aspartic acid (NMDA) glutamate receptor subunits have proven particularly difficult to develop. Recent developments, presented in the Minireview on page 13910 ff. by R. P. Clausen et al., suggest how compound design may achieve selective agonists and also partial agonists.

Surface–Molecule Interactions
An atomistic view of the surface–molecule interaction responsible for the enantiomeric separation of prochiral polycyclic aromatic hydrocarbons (PAHs) on metal surfaces is described. In the case of $C_{60}H_{30}$, a precursor for fullerene formation, deposited on a Pt(111) surface, the molecule can settle down in two chiral conformations. For more details see the Communication by J. A. Martín-Gago, R. Pérez et al. on page 13920 ff.





Protecting Groups
The electron-withdrawing effect of various carbohydrate protecting groups has been determined by the use of a piperidine-based model system. The different degrees of stabilization of positive charge on the ring heteroatom were determined by pK_a measurements and the observed trend was found to be in agreement with the "armed–disarmed" concept. For more details, see the Full Paper by M. Heuckendorff, C. M. Pedersen, and M. Bols on page 13982 ff.