

Polyazides

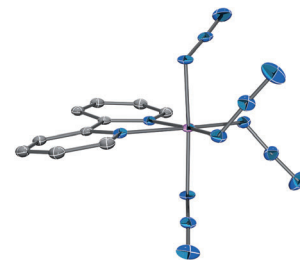
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Preparation of the First Manganese(III)
and Manganese(IV) Azides

Put your differences aside:

$\text{Mn}(\text{N}_3)_3 \cdot \text{CH}_3\text{CN}$ was obtained from MnF_3 through fluoride–azide exchange with Me_3SiN_3 in CH_3CN solution. The reaction of $\text{Mn}(\text{N}_3)_3 \cdot \text{CH}_3\text{CN}$ with PPh_4N_3 or 2,2'-bipyridine (bipy) resulted in disproportionation reactions and the formation of 1:1 mixtures of $(\text{bipy})_2\text{Mn}(\text{N}_3)_2$ and $(\text{bipy})\text{Mn}(\text{N}_3)_4$ (see structure) or $[\text{PPh}_4]_2[\text{Mn}(\text{N}_3)_4]$ and $[\text{PPh}_4]_2[\text{Mn}(\text{N}_3)_6]$, respectively.



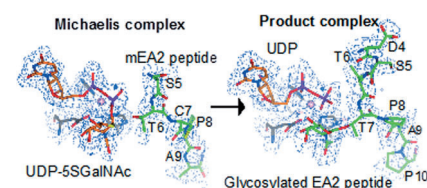
Catalytic Mechanisms

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Substrate-Guided Front-Face Reaction
Revealed by Combined Structural
Snapshots and Metadynamics for the
Polypeptide *N*-Acetylgalactosaminyl-
transferase 2

The magic of many moments: Structural snapshots of GalNAc-T2 complexes during the catalytic cycle were combined with quantum-mechanics/molecular-mechanics metadynamics to reveal an ordered bi–bi kinetic mechanism. Critical aspects of substrate recognition were identified that dictate the specificity for acceptor Thr versus Ser residues and enforce a front-face reaction in which the substrate *N*-acetyl sugar coordinates glycosyl transfer.



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Flashback: 50 Years Ago ...

Noble gas fluorides were first reported in 1962, and two years later progress in the field, including xenon difluoride, tetrafluoride, and higher fluorides, as well as krypton fluorides, were summarized in a Review by one of the protagonists, Rudolf Hoppe from the University of Giessen.

In another Review, Gottfried Schill discussed the directed synthesis of catena compounds (now more commonly known as catenanes). These interlocked ring systems were initially formed in very low yields in statistical reactions, however Schill and co-workers developed

a directed synthesis to avoid extra-annular ring closure.

Ernst Otto Fischer, who shared the 1973 Nobel Prize in Chemistry with Geoffrey Wilkinson, published a Communication on tungsten carbonyl carbene complexes. Reaction of $\text{W}(\text{CO})_6$ with LiC_6H_5 resulted in the formation of an orange crystalline compound $[\text{N}(\text{CH}_3)_4][\text{W}(\text{CO})_5\text{COC}_6\text{H}_5]$, which was protonated and methylated to give $\text{W}(\text{CO})_5(\text{COC}_6\text{H}_5)(\text{CH}_3)$ as diamagnetic orange-red crystals. $\text{W}(\text{CO})_5(\text{COCH}_3)(\text{CH}_3)$ was obtained when $\text{W}(\text{CO})_6$ was reacted with LiCH_3 in an analogous manner.

Margot Becke-Goehring reported on a pentavalent phosphorus–nitrogen compound. Reaction of aqueous methylammonium chloride with PCl_5 led to the formation of $\text{P}_4[\text{N}(\text{CH}_3)]_6\text{Cl}_8$, which was postulated to have a cage structure. Becke-Goehring was made Vice-Chancellor of the University of Heidelberg in 1966, and was the first woman appointed to such a role in a West German University.

[Read more in Issue 8/1964.](#)