

The expensive nicotinamide cofactor required by redox enzymes acts as an electron donor or acceptor by releasing or accepting a hydride in a one-step two electron transfer. The development of inexpensive synthetic nicotinamide coenzyme biomimetics (NCBs) has led to a major breakthrough for C=C bond reducing enzymes and the same concept can be applied for other oxidoreductases. In addition, using light-activated NCBs could give access to non-natural redox reactions in these enzymes. Right now, we are focusing on the synthesis and the applications of biomimetics that can be accepted by several hydroxylases.