RomCat2022-13th International Symposium of The Romanian Catalysis Society, Băile Govora, România, June 2022

Improving transaminase activity towards bulky aldehydes and ketones through protein engineering

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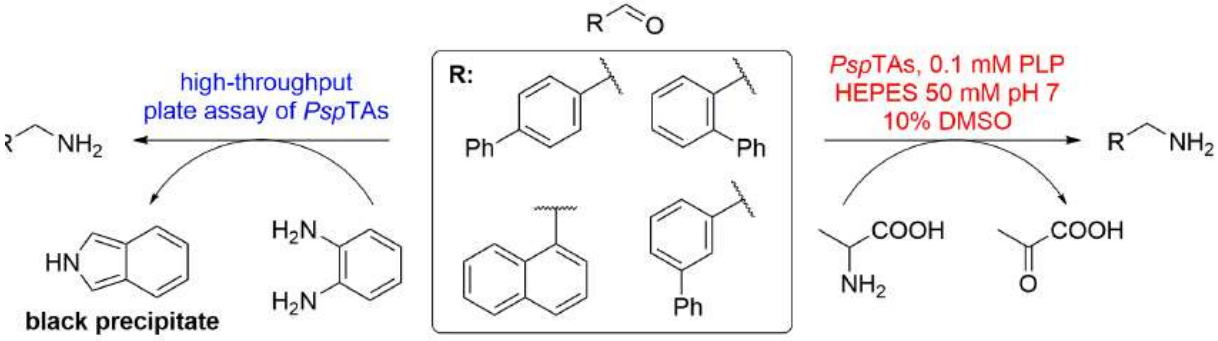
*Wild-type Psp*TA proves to be a suitable biocatalyst for the transmination of large aldehydes, as predicted by computational methods. The homologous model was of further aid in judiciously selecting targets for protein engineering, which resulted in mutant variants with increased substrate scope and stability.



Overlay of the biding poses of benzaldehyde (magenta) and [1,1'-biphenyl]-3-carbaldehyde (cyan) relative to PMP (grey) - 1.8 Å and 2.1 Å respectively - and to key residues (green) are illustrated.