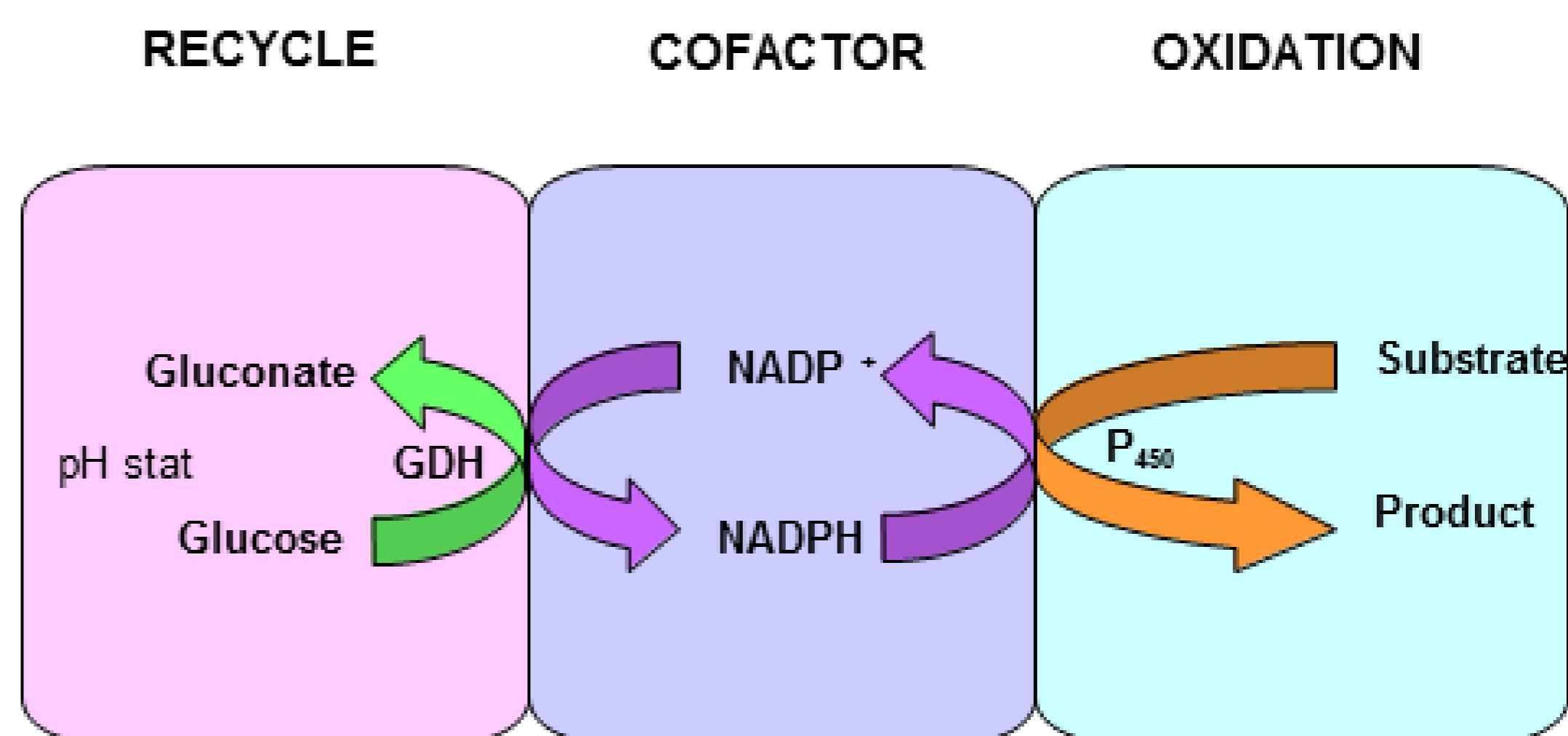
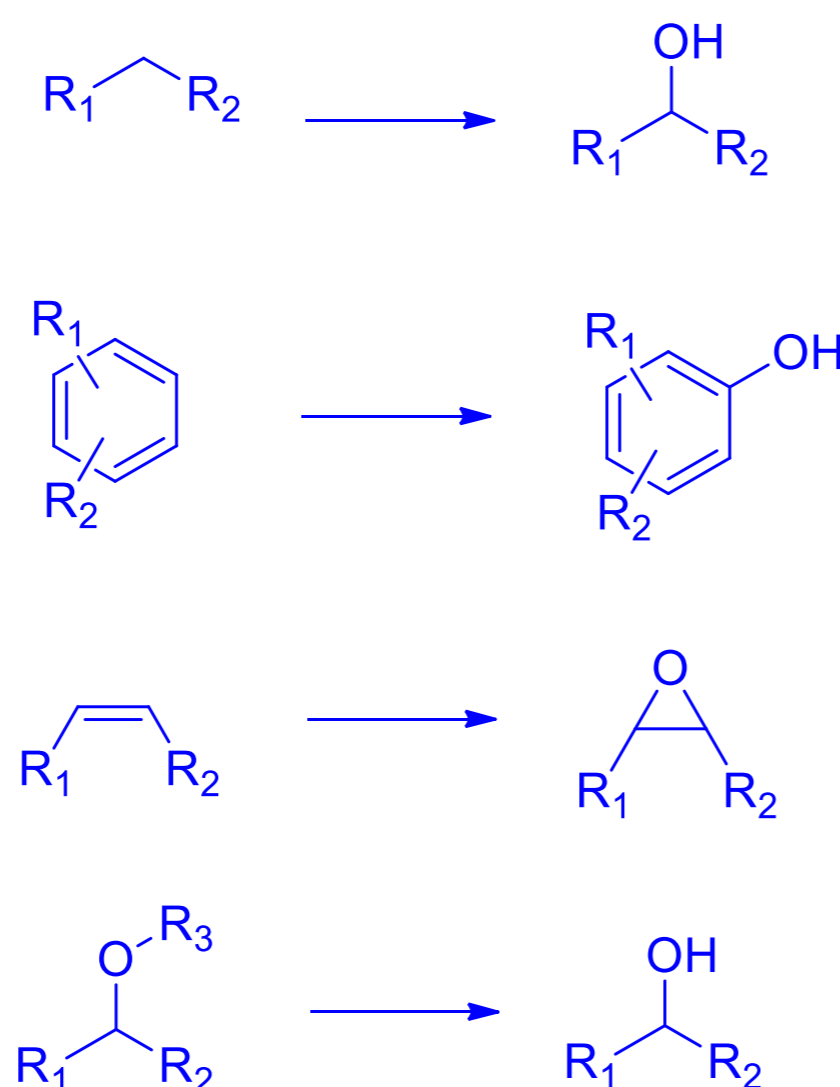


Applications

Selective oxidation of unactivated carbons to produce alcohols and phenols, selective epoxidation of olefins, *N*- and *O*-dealkylations.



Kit description

The kit contains 20 pre-formulated P₄₅₀ monooxygenase biocatalysts as lyophilised powders, as well as pre-prepared phosphate buffer, NADP cofactor, reaction enhancer, glucose and glucose dehydrogenase (GDH) for the cofactor recycle system

P₄₅₀s included in this kit

P450-003	P450-004	P450-006	P450-018	P450-027
P450-042	P450-043	P450-051	P450-201	P450-205
P450-211	P450-314	P450-316	P450-322	P450-355
P450-379	P450-382	P450-046	P450-005	P450-394

Kit Contents:

P ₄₅₀ monooxygenases	20 vials lyophilised powder
	(50 mg each)
NADP	1 vial (100 mg)
GDH	1 vial (130 mg)
Glucose	1 vial (200 mg)
0.1M KH ₂ PO ₄ buffer (pH 7.4)	1 bottle (140 mL)
MgCl ₂ (2 M)	1 bottle (2 mL)

Screening conditions

1. Add 700 μL of 2 M MgCl₂ to 140 mL buffer.
2. Into a flask/vial, add 1 mL P₄₅₀ enzyme in buffer (15 mg/mL).
3. Add 100 μL of glucose in buffer (30 mg/mL).
4. Add 100 μL of NADP in buffer (15 mg/mL).
5. Add 100 μL of GDH in buffer (20 mg/mL).
6. Add a solution of 0.05-0.5 mg substrate in organic solvent (10-20 μL , depending on solubility) such as DMSO, EtOH, ACN.
7. Shake/stir at room temperature (or ideally 37 °C). Agitate overnight.
8. Add a water miscible organic solvent (1 mL) such as ACN or MeOH.
9. Analyse sample by HPLC/LCMS to determine conversion.

It is not advisable to keep stock solutions of cofactors or enzymes, as these will degrade over time. Make each stock solution fresh on the day of use. An adequate supply of NADP, GDH, glucose and buffer has been provided for 3 screens with each enzyme. Additional GDH, buffer, glucose or NADP can be purchased from Almac if required.

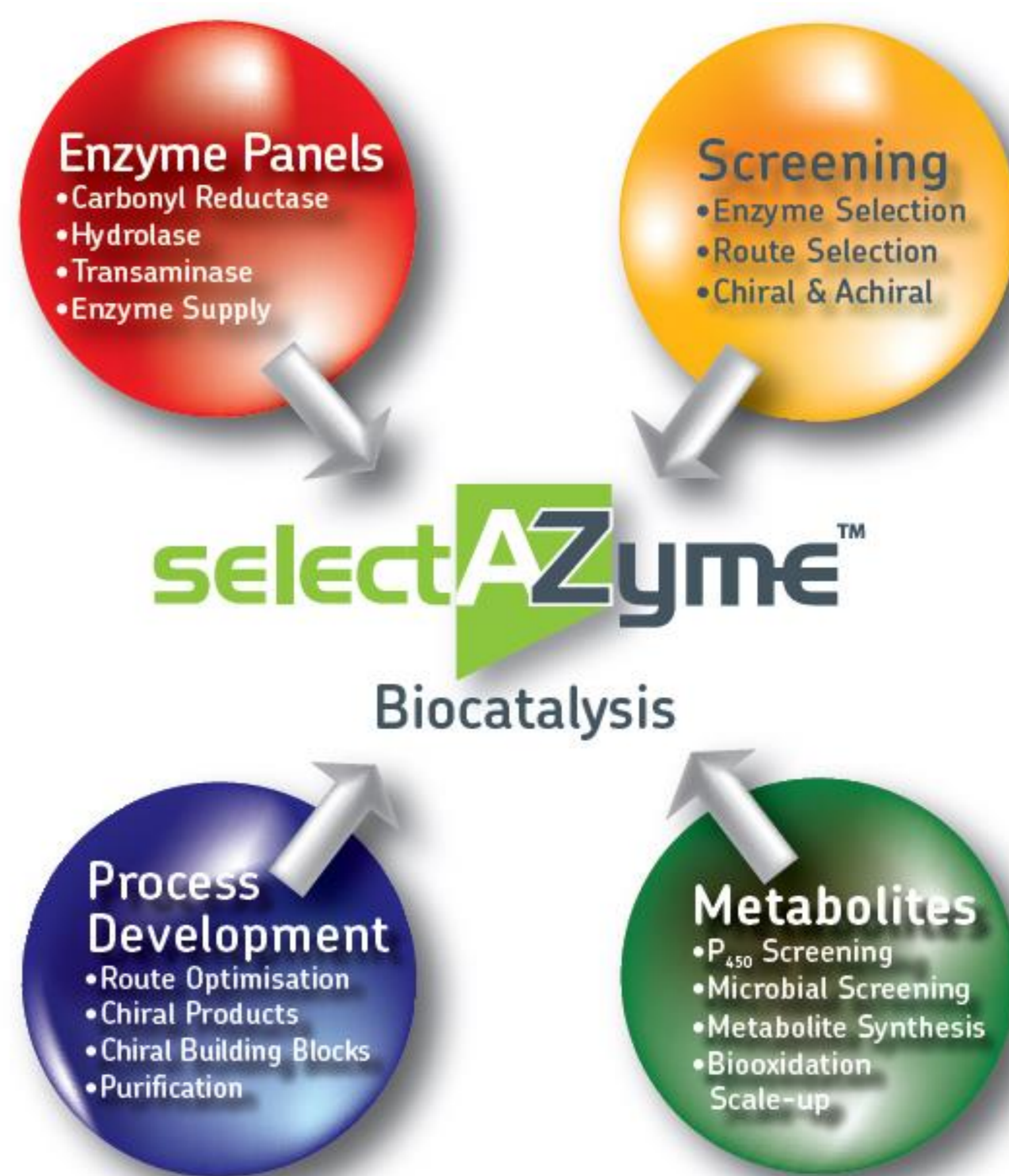
Storage: The P₄₅₀ Monooxygenase enzyme screening kit should be stored in a refrigerator at 4 °C to preserve activity. The lifetime of the enzymes can be prolonged if stored at -20 °C

P₄₅₀ Monooxygenase Enzyme Screening Kit

OxESK-2000 (50 mg)

selectAZyme Offerings

- An ever-expanding biocatalysis team including molecular and microbiologists, enzymologists, bioinformaticians, organic chemists and analysts, all equipped with state-of-the art facilities.
- Expertise in gene identification, expression, fermentation and enzyme production, followed by the efficient use of enzymes to produce complex chiral APIs.
- Enzyme evolution based on computational re-design, semi-rational and random mutagenesis approaches, allowing access to bespoke biocatalysts with enhanced activity, selectivity and process robustness.
- Fully integrated biocatalyst development through screening, (chemo-) enzymatic route definition, process development and scale up (pilot plant facilities available).
- Rapid implementation of enzymatic steps in complex, multi-stage syntheses, leading to significant improvements in production yields and timelines.
- A simple business model that avoids IP issues.



The selectAZyme Range of Enzyme Screening Kits

Our selectAZyme kits include a detailed user guide and come with all buffers, cofactors, recycling systems and reagents necessary to perform screens using standard laboratory equipment.

Carbonyl Reductase (CRED) biocatalysts

96 CRED biocatalysts for the production of chiral alcohols and/or use in cofactor recycling schemes

Aldehyde Reductase (ARED) biocatalysts

16 ARED biocatalysts

Hydrolase biocatalysts

48 commercially available hydrolases for selective acylation of alcohols and amines.

Nitrilase and Nitrile Hydratase (NHase) biocatalysts

9 NHases and 15 nitrilases

Transaminase (TAm) biocatalysts

96 TAm for the production of chiral amines from pro-chiral ketones.

Ene Reductase (ERED) biocatalysts

143 ERED biocatalysts for asymmetric reduction of activated alkenes

P₄₅₀ Monooxygenase biocatalysts

96 P₄₅₀ monooxygenase biocatalysts for a huge range of highly selective oxidations

Want Almac to do the screening for you?

- Our experienced biocatalysis team can screen all of our enzymes against your target substrate(s) and simply provide the results.
- Flexible options for subsequent enzyme supply, evolution services, process development and scale up as required.

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