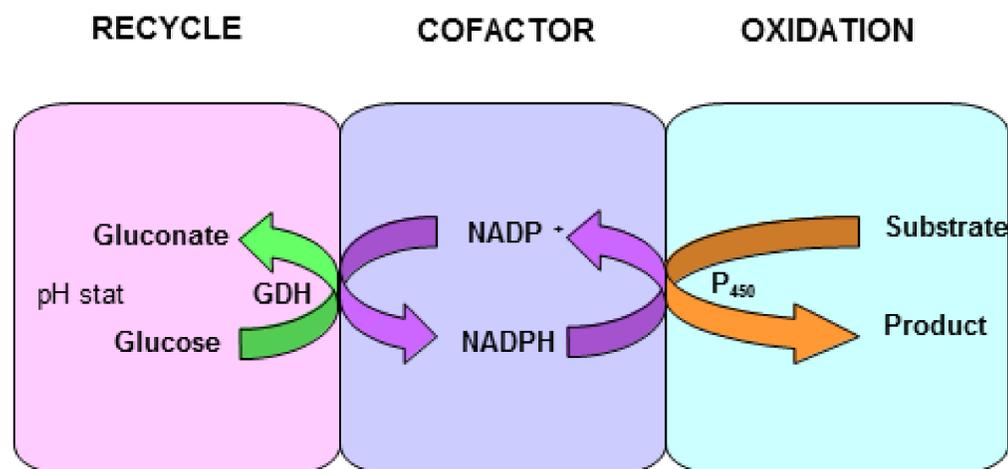
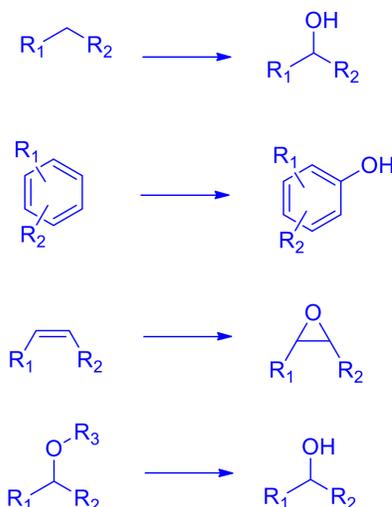


## Applications

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



## Kit description

The kit contains 10 pre-formulated human P<sub>450</sub> 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

### HOx enzymes included in kit

HOX-01	HOX-06
HOX-02	HOX-07
HOX-03	HOX-08
HOX-04	HOX-09
HOX-05	HOX-10

### Kit Contents:

Human P <sub>450</sub> monooxygenases	10 vials cell free extract (50 µL each)
Reaction mix*	1 bottle (71 mg)
0.1 M KH <sub>2</sub> PO <sub>4</sub> buffer + MgCl <sub>2</sub> (pH 7.4)	1 bottle (6 mL)
*Once dissolved in 6 ml phosphate buffer, reaction mix contains 7.2 mg/ml glucose, 3 mg/ml NADP and 4 mg/ml GDH.	

## Screening conditions

The reagents are prepared for a one shot screening.

1. Add 5 mL buffer to reaction mix.
2. Mix well until everything is dissolved keep at room temperature.
3. Thaw the enzymes at room temperature and add 450 µL of above mix to each vial.
4. Mix well without vortexing and without introducing air bubbles to the system.
5. Add a solution of 0.1 mg substrate in organic solvent (5 – 20 µL, depending on solubility) such as DMSO, EtOH, ACN.
6. Shake horizontally in provided box at 37 °C.

Alternatively: leave at room temperature and shake occasionally.

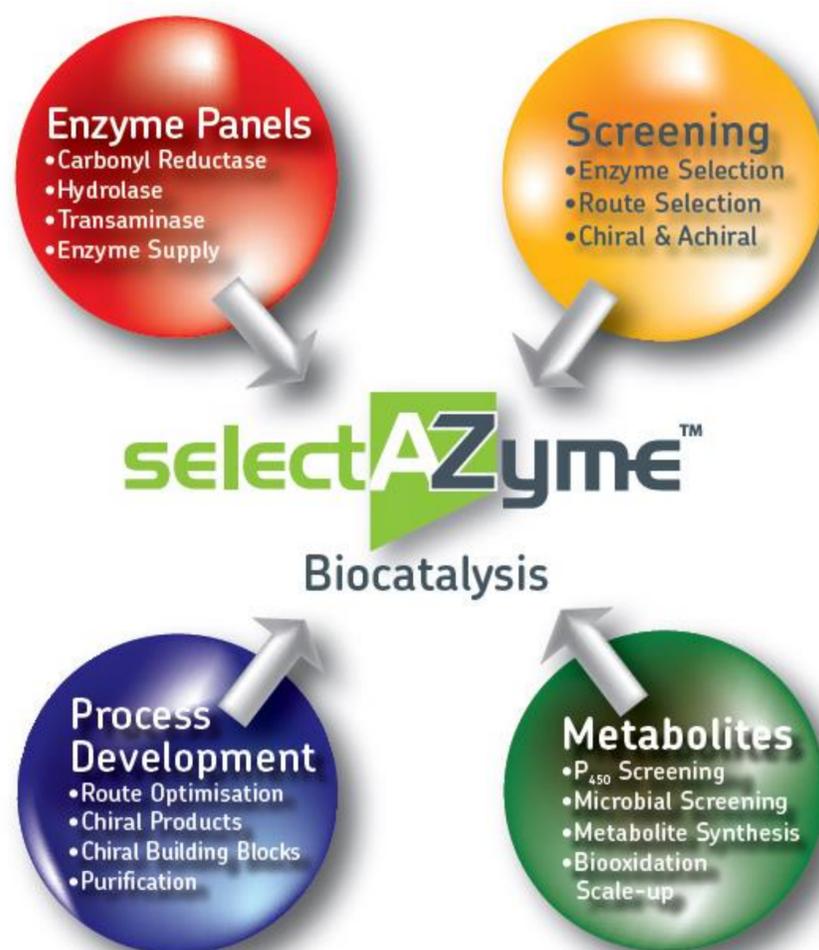
7. The reaction should be finished after 4 h, but can be left overnight.
8. Add a water miscible organic solvent (250 mL) such as ACN or MeOH.
9. Analyse sample by HPLC/LCMS to determine conversion.

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 1 screen with each enzyme. Additional GDH, buffer, glucose or NADP can be purchased from Almac if required.

**Storage:** The human P<sub>450</sub> Monooxygenase enzyme screening kit should be stored in at -80 °C to preserve activity

## 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.

## Technical Contacts:

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