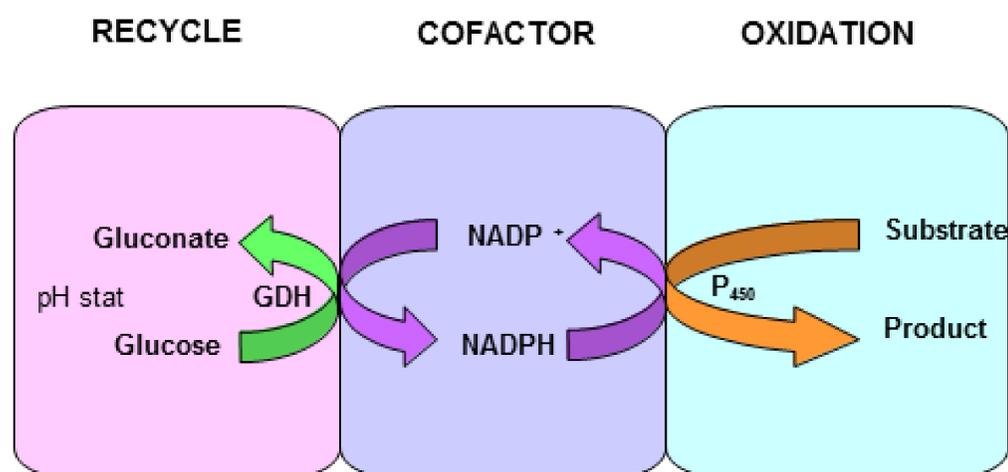
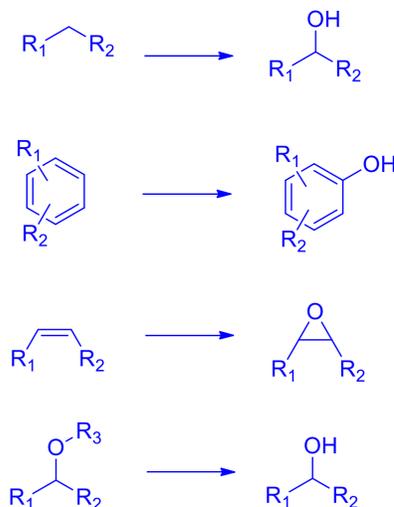


Applications

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



Kit description

The kit contains 96 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

P₄₅₀ monooxygenases included in kit

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	10	21	32	44	206	217	239	306	341	377	427
B	2	11	22	34	46	209	218	240	307	356	379	432
C	3	12	25	35	200	210	219	241	308	359	384	433
D	4	14	26	36	201	211	221	243	313	363	390	438
E	5	15	28	37	202	212	227	245	314	366	394	440
F	6	16	29	38	203	213	229	248	316	370	423	443
G	7	19	30	40	204	214	231	255	326	372	424	445
H	8	20	31	42	205	215	233	269	340	374	425	446

Kit Contents:

P₄₅₀ monooxygenases

96 vials lyophilised powder (10 mg each)

Reaction mix

1 vial (650 mg)

0.1M KH₂PO₄ buffer (pH 7.4) + MgCl₂

1 bottle (50 mL)

Screening conditions

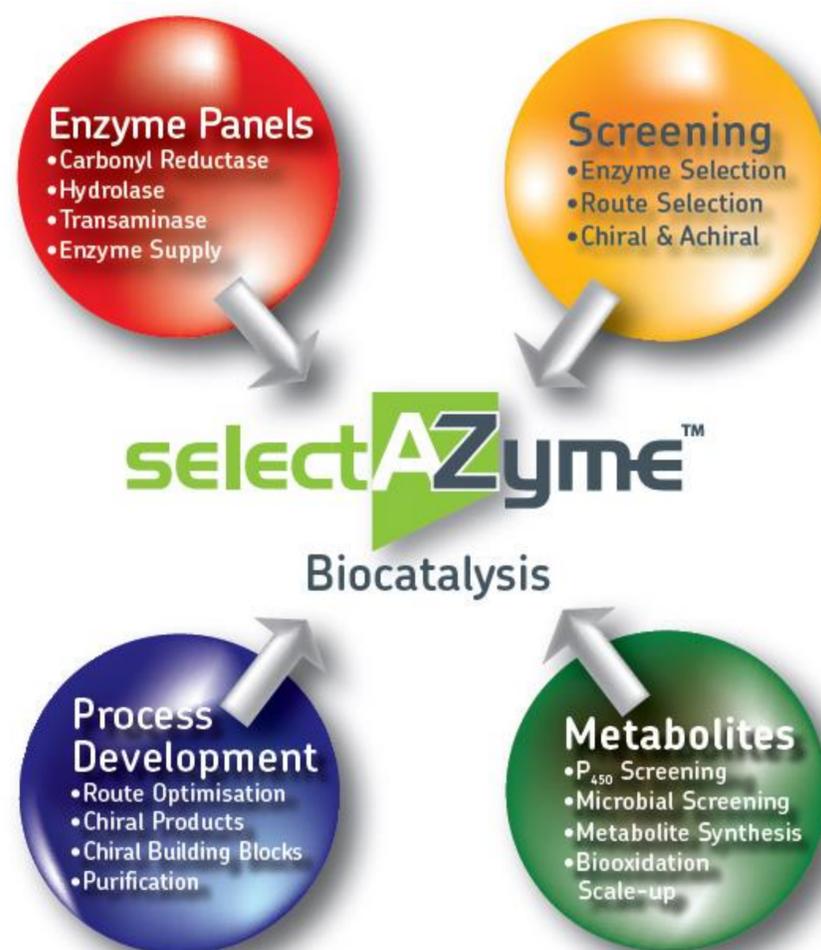
1. Into a flask/vial, add reaction mix to 50 mL of buffer.
2. Add 500 μL of reaction mix solution to each well.
3. Add a solution of 0.05-0.5 mg substrate in organic solvent (10-20 μL, depending on solubility) such as DMSO, EtOH, ACN.
4. Shake/stir at room temperature (or ideally 37 °C). Agitate overnight.
5. Add a water miscible organic solvent (1 mL) such as ACN or MeOH.
6. 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

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:

Prof. Tom Moody, Tel: +44 (0)28 3833 2200 Ext. 5517, E-mail: tom.moody@almacgroup.com.

Dr. Derek Quinn, Tel: +44 (0)28 3833 2200 Ext. 5833, E-mail: derek.quinn@almacgroup.com.

Address: Almac Biocatalysis & Isotope Chemistry Group,

20 Seagoe Industrial Estate, Craigavon BT63 5QD

Web: www.almacgroup.com,

Email: biocatalysis@almacgroup.com