

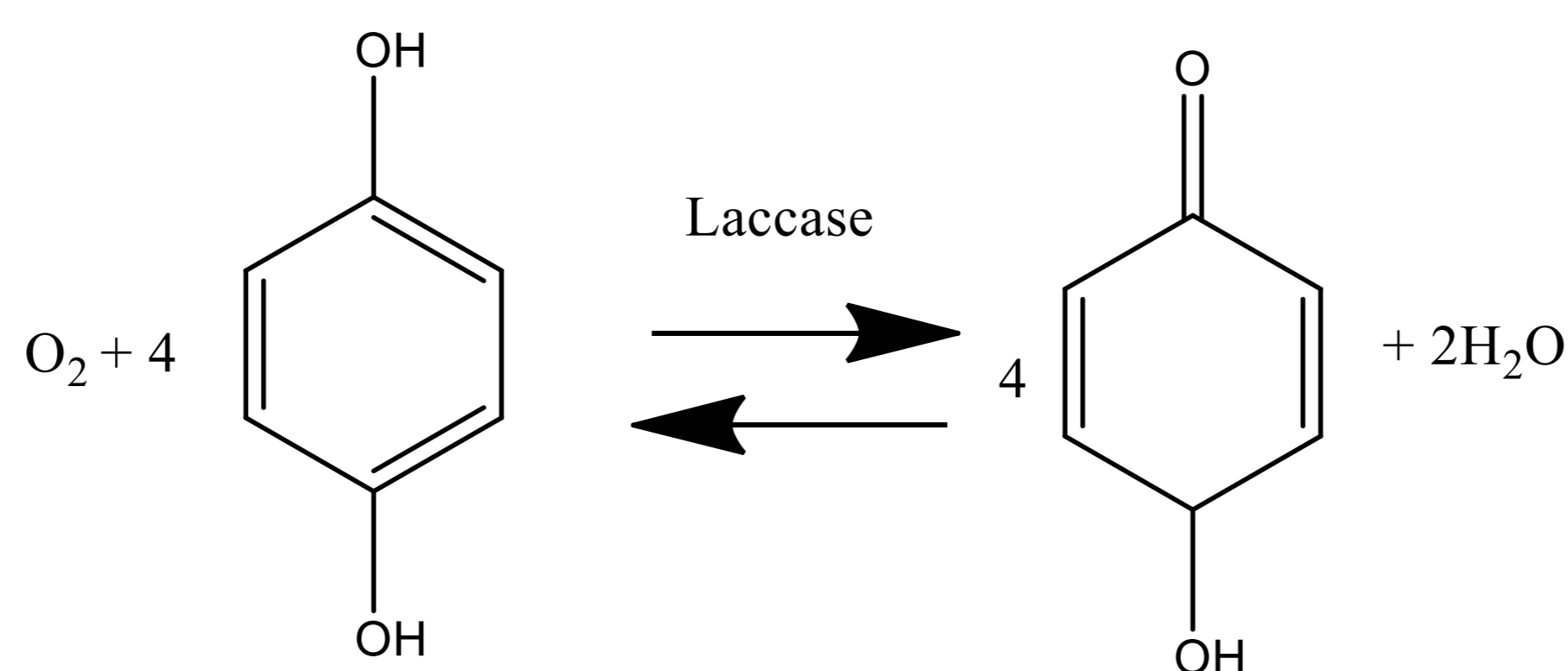
Applications

Laccase catalyse one-electron oxidations and can promote the oxidative coupling of phenol derivatives.

Kit description

Laccases are multi-copper oxidase complexes with a broad specificity for one-electron oxidation of phenolic related compounds, resulting in the reduction of O₂ to water

The kit contains 96 diverse pre-formulated Laccase biocatalysts as lyophilised powders in 96 well format, as well as pre-prepared Tris buffer and reaction mix for the cofactor recycle system.



Laccases in screening kit

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	9	17	25	33	41	49	57	65	73	81	89
B	2	10	18	26	34	42	50	58	66	74	82	90
C	3	11	19	27	35	43	51	59	67	75	83	91
D	4	12	20	28	36	44	52	60	68	76	84	92
E	5	13	21	29	37	45	53	61	69	77	85	93
F	6	14	22	30	38	46	54	62	70	78	86	94
G	7	15	23	31	39	47	55	63	71	79	87	95
H	8	16	24	32	40	48	56	64	72	80	88	96

Contents

Laccases	96 enzymes (10 mg each) in 96 well format
Reaction mix	1 vial (3 g)
DMSO	1 vial (10 mL)
0.1M Tris buffer (pH 6)	1 bottle (50 mL)

Screening Procedure

1. Into a vial, add the reaction mix into 50 mL buffer.
2. Add 500 µL of the reaction mix solution to each well.
3. Add a solution of ~10 mg substrate in organic solvent (50-100 µL, depending on solubility) such as DMSO or MTBE.
4. Shake/stir at room temperature (or ideally 25 °C). Agitate overnight.
5. Extract product with an organic solvent (MTBE, EtOAc etc.).
6. Analyse sample by chiral GC/HPLC to determine conversion and product ee.

*It is not advisable to keep the reaction mix solution as this will degrade over time. Make the solution fresh and use immediately. An adequate supply of TEMPO and buffer has been provided for 1 screen. Additional TEMPO can be purchased from Almac if required.

Storage: Recommend refrigeration at 4°C to preserve enzyme activity.

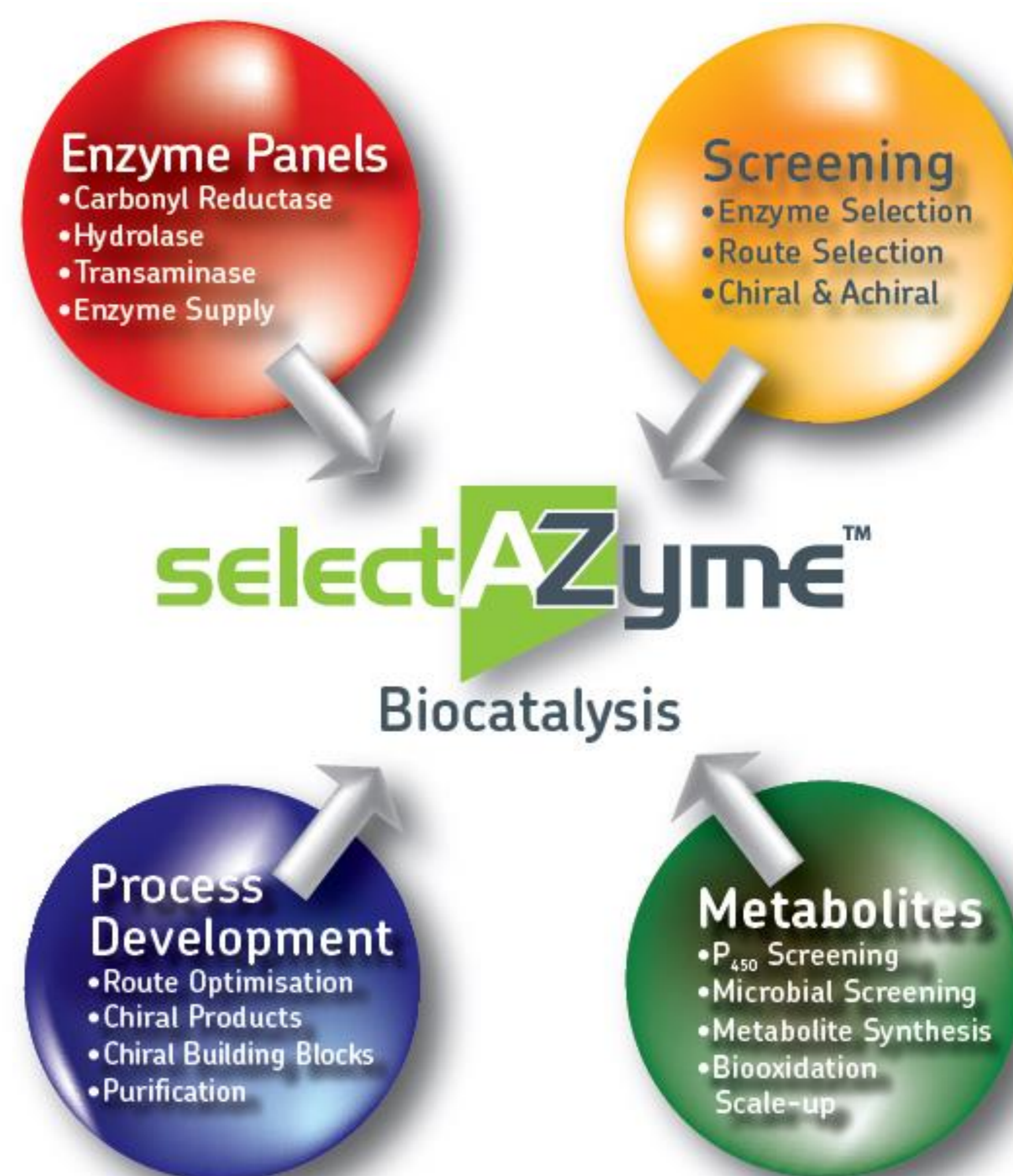
Laccase

Enzyme Screening Kit

LACESK-9600

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