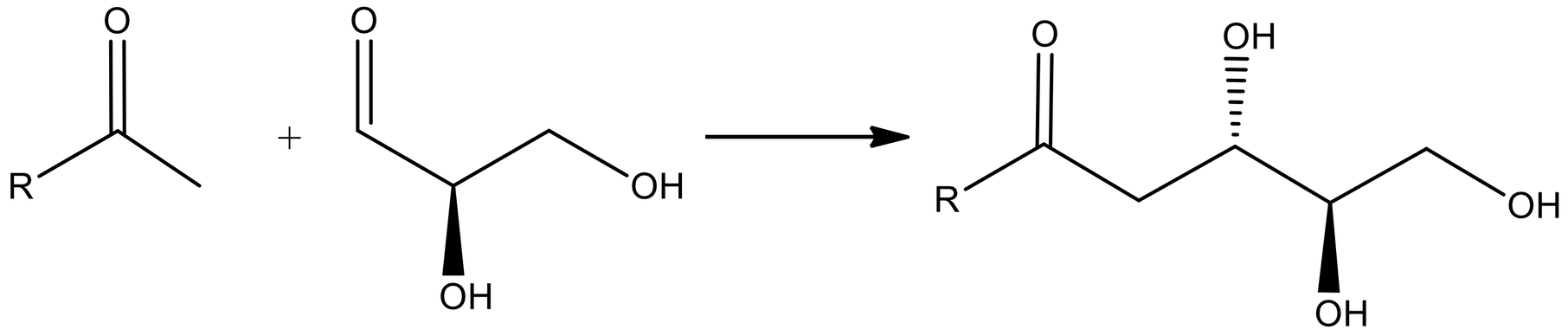
Aldolase (DERA) Enzyme Screening Kit

DERAESK-9600

Partnering to Advance Human Health

Applications

Deoxyribose-5-phosphate Aldolases (DERAs) catalyse a reversible aldol reaction between acetaldehyde and D-glyceraldehyde 3-phosphate to generate 2-deoxy-D-ribose 5-phosphate.



Kit description

The kit contains 96 diverse pre-formulated DERAs biocatalysts as lyophilised powders, as well as pre-prepared Tris buffer.

DERA contained in the 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

DERAs	96 enzymes (10 mg each)
DMSO	1 vial (10 mL)
0.1M Tris buffer (pH7.4)	1 bottle (50 mL)

Screening Procedure

1.Add 500 µL Tris-HCl buffer to each well.

2.Add a solution of ~5 mg substrate and 2 equivalent of acetaldehyde or acetone. If needed it can be dissolved in organic solvent (50-150 µL, depending on solubility) such as DMSO or MTBE.

3.Shake/stir at room temperature (or ideally 35 ºC). Agitate overnight.

4.Extract product with an organic solvent (MTBE, EtOAc etc.), if needed.

5.Analyse sample by GC/HPLC to determine conversion.

*It is recommended to make the reaction mix solution fresh and use immediately. Avoid storage of the reaction mix as a solution, as this will degrade over time.

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

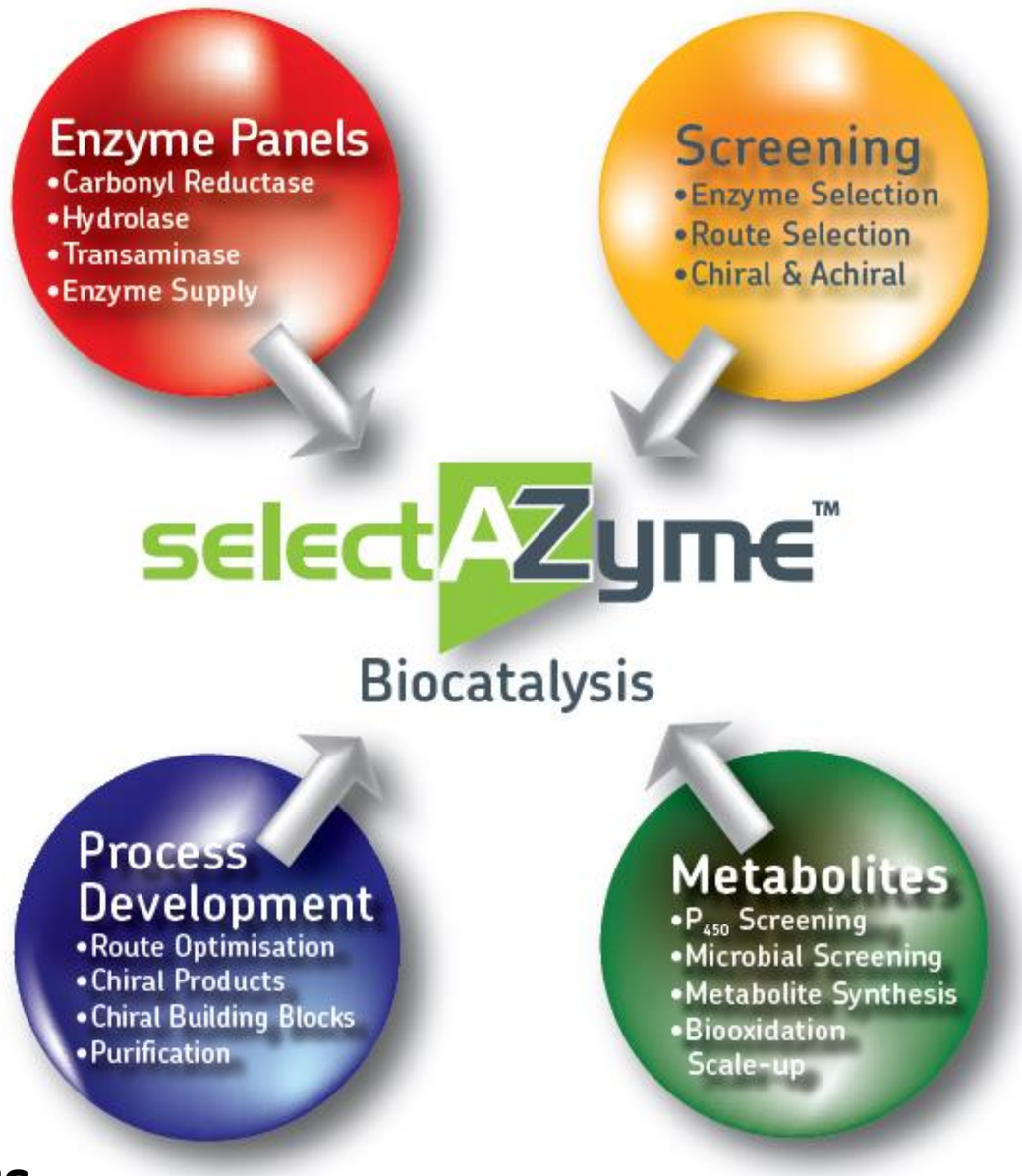
Aldolase (DERA) Enzyme Screening Kit

DERAESK-9600

Partnering to Advance Human Health

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 selectAZmye 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 TAms for the prodcution 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