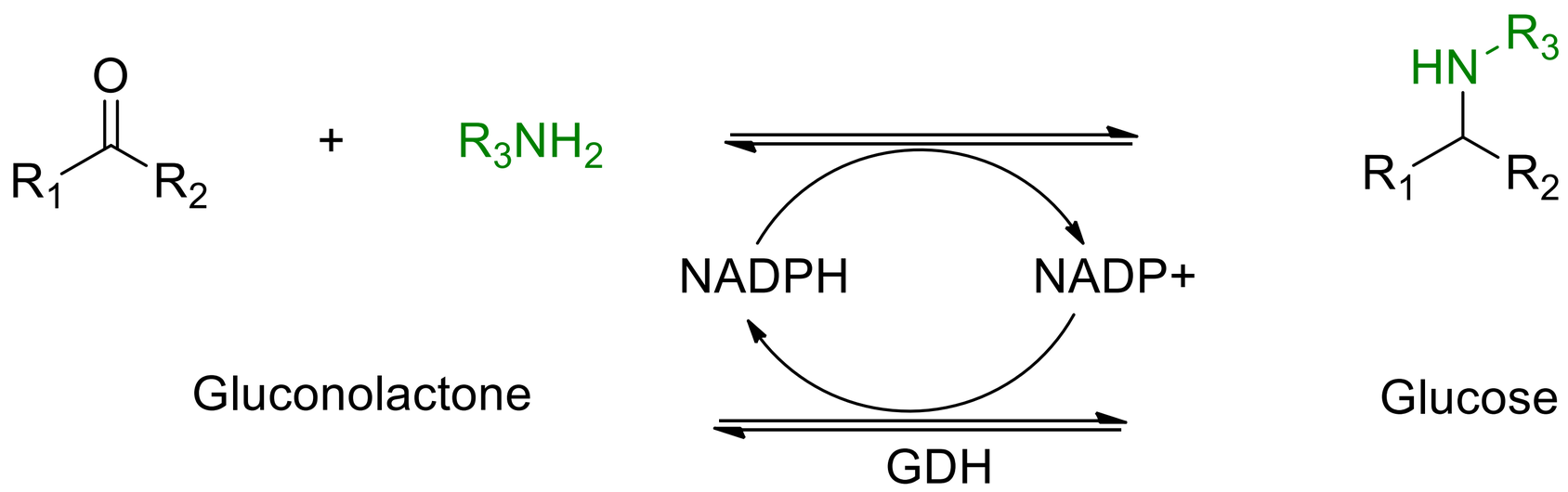
Reductive Aminase (RedAm) Enzyme Screening Kit

RedAmESK-5000

Partnering to Advance Human Health

Applications

Reductive aminase (RedAm) catalyse the reductive amination of carbonyl group



Kit description

The kit contains 50 diverse pre-formulated Reductive aminase biocatalysts as lyophilised powders in 96-well format as well as pre-prepared Tris buffer and a reaction mix for the cofactor recycle system.

The enzymes supplied have not been extensively characterised therefore data regarding their substrate range and activity is limited.

RedAm enzymes contained in the screening kit

	1	2	3	4	5	6	7
A	101	109	117	125	133	141	149
B	102	110	118	126	134	142	150
C	103	111	119	127	135	143	
D	104	112	120	128	136	144	
E	105	113	121	129	137	145	
F	106	114	122	130	138	146	
G	107	115	123	131	139	147	
H	108	116	124	132	140	148	

Contents

RedAm: 50 enzymes	10 mg each in 96-well format
Reaction mix*	1 vial (1.98g)
DMSO	1 vial (10 ml)
0.1M Tris HCl (pH 9)	1 bottle (30 ml)

*Once dissolved in 30 ml 0.1M Tris HCl reaction mix contains 60 mg/ml glucose, 2 mg/ml NADP and 4 mg/ml GDH.

Screening Procedure

1. Into a vial, add 30 ml Tris buffer to the reaction mix.*
2. Once dissolved, add 500 µl of the reaction mix solution to each assay containing 10 mg of the RedAm.
3. Add a solution of ~10 mg of Ketone ((50-100 µl, depending on solubility), e.g. DMSO or MTBE and the appropriate amine (2 to 20 equivalent in Tris HCl adjusted to 9)
4. Shake/stir at room temperature (or ideally 30 °C). Agitate overnight.
5. Basify the reaction with NaOH (10 M) to pH 12, extract product with an organic solvent (MTBE, EtOAc etc.).
6. Analyse sample by GC/HPLC to determine conversion and product ee.

*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. An adequate supply of NADP, GDH, glucose and buffer is provided for one screen. Additional GDH, buffer, glucose or NAD/NADP can be purchased from Almac if required

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

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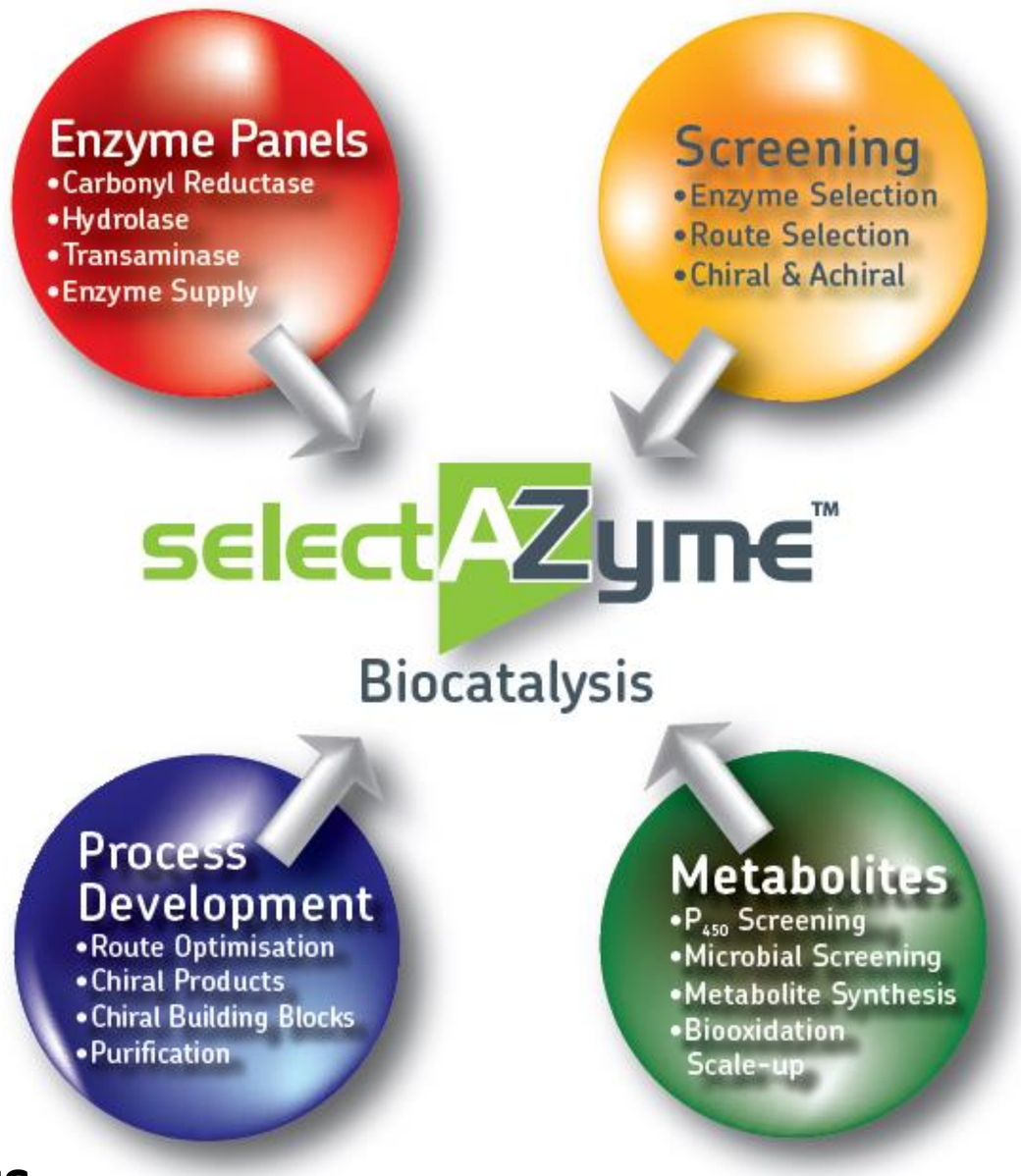
selectAZyme Offerings

- 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.

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