Ene Reductase (ERED) Enzyme Screening Kit

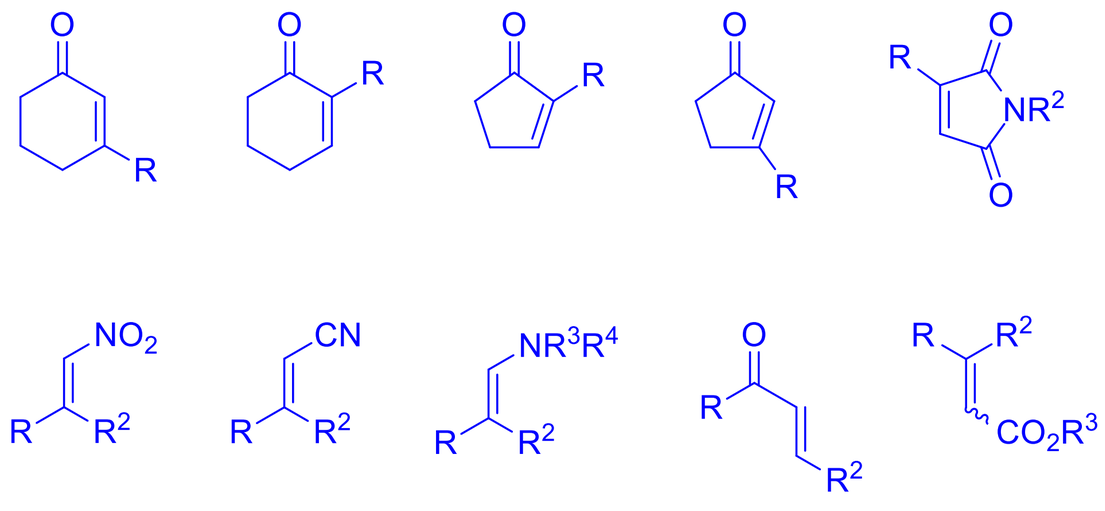
ERESK-9600

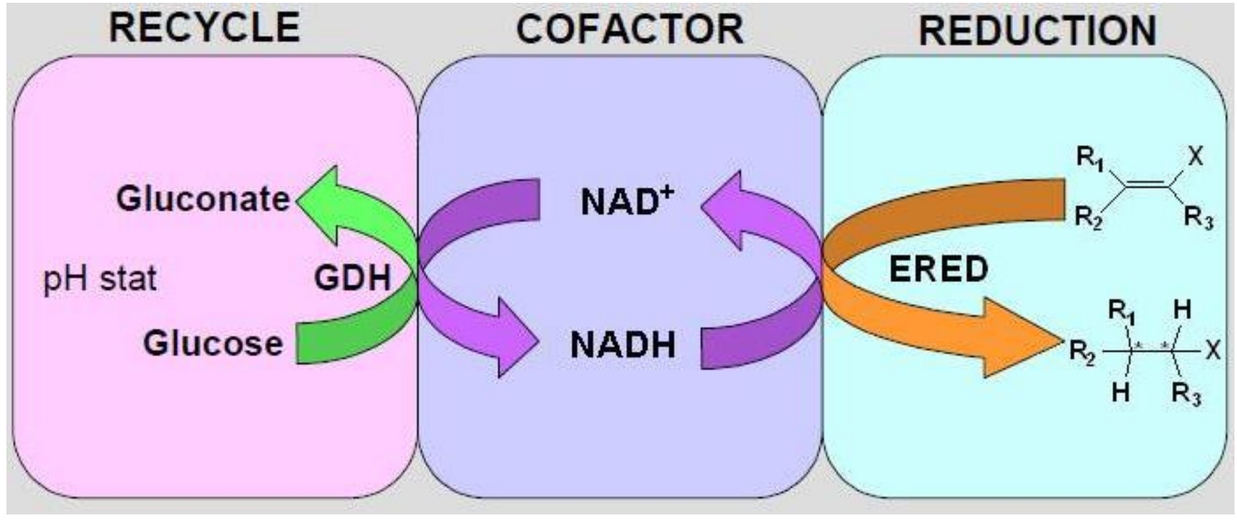
Partnering to Advance Human Health

Applications

- Reduction of electron deficient olefins.
- Allows formation of up to two new chiral centres from pro-chiral olefins.
- Allows regioselective reduction in a molecule containing more than one alkene moiety.
- Activities with a wide variety of structurally diverse olefins. A selection is shown below.

Substrate Range





Kit description

The kit contains 96 diverse pre-formulated ene reductase (ERED) biocatalysts as lyophilised powders in a 96 well plate format, as well as pre-prepared Tris buffer and reaction mix for the cofactor recycle system.

EREDs contained in the screening kit

9600	1	2	3	4	5	6	7	8	9	10	11	12
A	201	209	217	225	233	241	249	257	265	273	281	289
B	202	210	218	226	234	242	250	258	266	274	282	290
C	203	211	219	227	235	243	251	259	267	275	283	291
D	204	212	220	228	236	244	252	260	268	276	284	292
E	205	213	221	229	237	245	253	261	269	277	285	293
F	206	214	222	230	238	246	254	262	270	278	286	294
G	207	215	223	231	239	247	255	263	271	279	287	295
H	208	216	224	232	240	248	256	264	272	280	288	296

Contents:

EREDs	96 (10 mg each)
Reaction mix*	1 vial (3 g)
DMSO	1 vial (10 ml)
0.1M Tris buffer (pH 7.5)	1 bottle (50 ml)

*Once dissolved in 50 ml Tris buffer, reaction mix contains 60 mg/ml glucose, 2 mg/ml NAD/NADP and 6 mg/ml GDH

Screening Procedure

1. Into a vial, add Tris buffer to the reaction mix.**
2. Once dissolved, 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), e.g. DMSO or MTBE.
4. Shake/stir at room temperature (or ideally 30 ºC). Agitate overnight.
5. Extract product with an organic solvent (MTBE, EtOAc etc.).
6. Analyse samples.

**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 NAD, NADP, GDH, glucose and buffer is provided for screening one plate. Additional GDH, buffer, glucose, NAD and NADP can be purchased from Almac if required.

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

ALMAC

Partnering to Advance Human Health

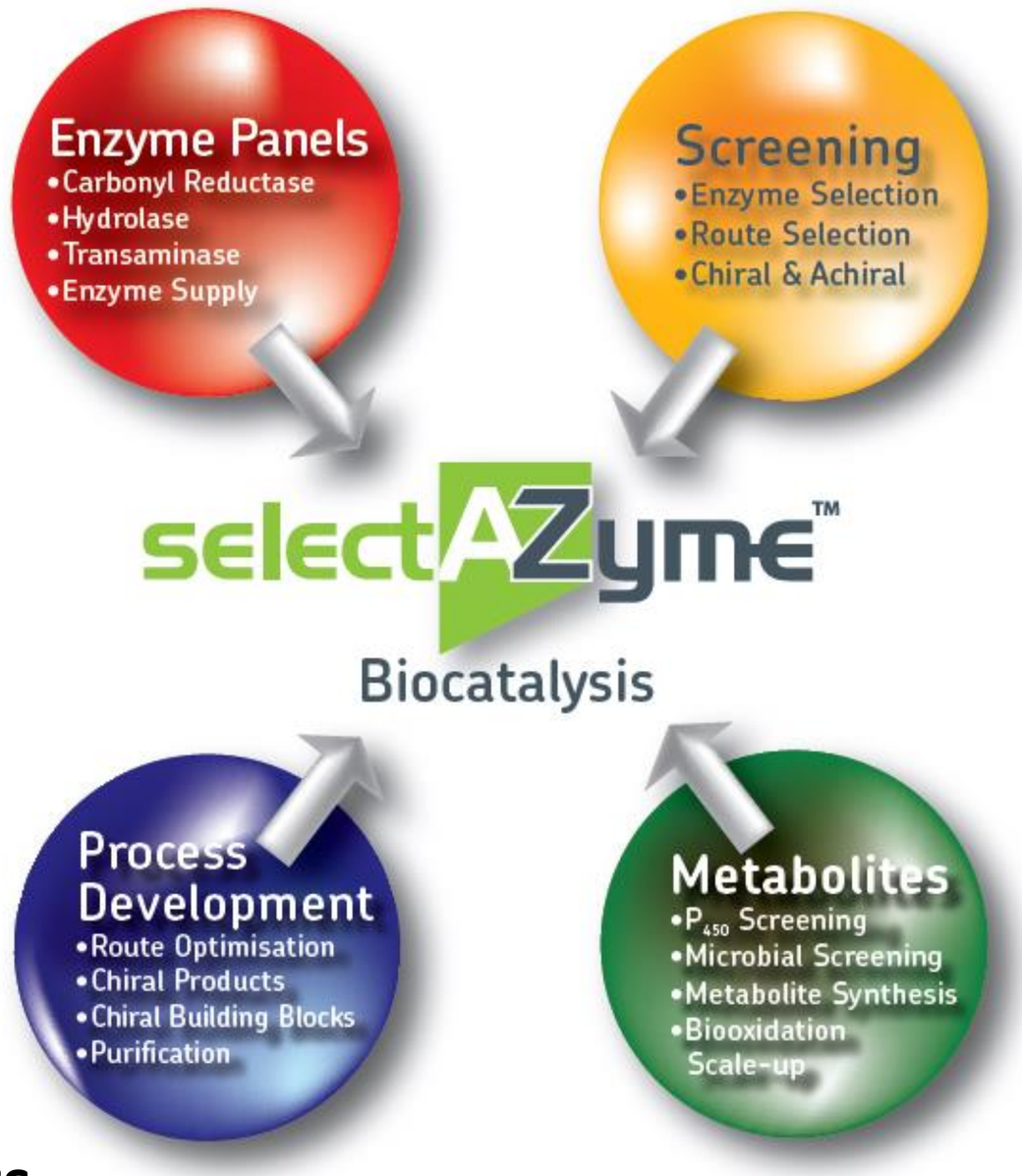
Ene Reductase (ERED) Enzyme Screening Kit

ERESK-9600

selectAZyme™

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