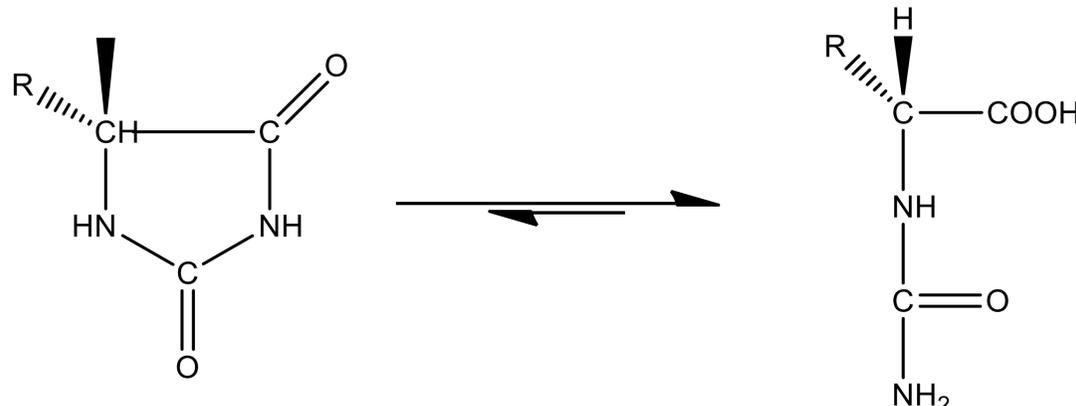


### Applications

Hydantoinases are valuable enzymes for the production of optically pure D- and L-amino acids. They catalyse the reversible hydrolytic ring cleavage of hydantoin or 5'-monosubstituted hydantoins.



### Kit description

The kit contains 25 diverse pre-formulated hydantoinase biocatalysts as lyophilised powders, as well as pre-prepared Tris buffer and manganese sulphate.

### HDTs included in kit

HDT-01	HDT-09	HDT-17	HDT-25
HDT-02	HDT-10	HDT-18	
HDT-03	HDT-11	HDT-19	
HDT-04	HDT-12	HDT-20	
HDT-05	HDT-13	HDT-21	
HDT-06	HDT-14	HDT-22	
HDT-07	HDT-15	HDT-23	
HDT-08	HDT-16	HDT-24	

### Contents

Hydantoinase (HDT)	25 vials lyophilised powder (50 mg each)
Empty vector control (EVC)	1 vial (50 mg)
Manganese sulphate	1 vial (10 mg)
0.05M Tris buffer (pH 8.0)	1 bottle (200 mL)

### Screening Procedure

- Make up the following stock solutions in using the reagents and buffer provided.
  - 11 mg/mL solution of each HDT in buffer.
  - 1.25 mg/mL solution of  $MnSO_4$  in buffer. (Store at  $-20\text{ }^\circ\text{C}$  after use).
  - 11 mg/mL solution of EVC in buffer for negative control
- Into a vial add reagent A (900  $\mu\text{L}$ ) and reagent B (50  $\mu\text{L}$ ).
- Also set up one vial with reagent C (900  $\mu\text{L}$ ) as negative control and add reagent B and substrate.
- Add a solution of 0.5-1 mg substrate in organic solvent (50  $\mu\text{L}$ , depending on solubility) such as DMSO, EtOH, ACN.
- Shake/stir at room temperature (or ideally  $30\text{ }^\circ\text{C}$ ). Agitate overnight.
- Add a water miscible organic solvent (1 mL) such as ACN or MeOH.
- Centrifuge or filter through 0.2 $\mu\text{M}$  filter to remove protein.
- Analyse sample by HPLC/LCMS to determine conversion.

\*It is recommended to make the stock solutions fresh and use immediately. Avoid storage of the enzyme as a solution, as this will degrade over time. An adequate supply of buffer has been provided for 3 screens with each enzyme. Additional supplies can be purchased from Almac if required.

**Storage:** Recommend refrigeration at  $4\text{ }^\circ\text{C}$  to preserve enzyme activity.

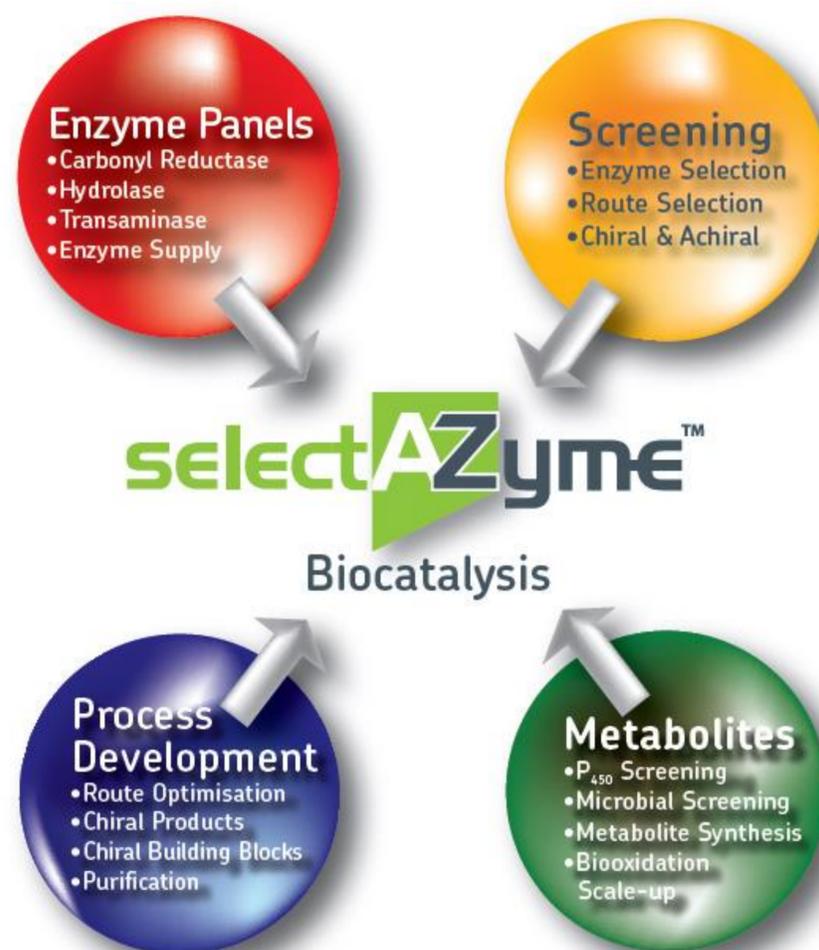
# Hydantionase

## Enzyme Screening Kit

### HDTESK-2500 (50 mg)

### 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.

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