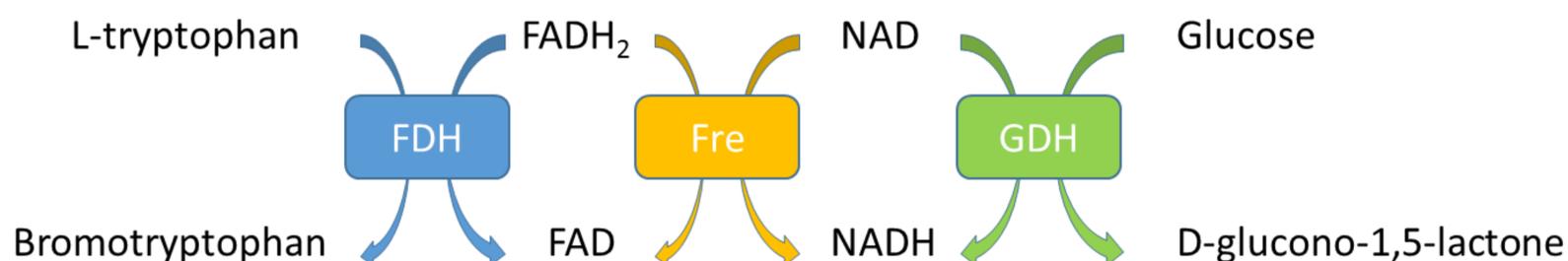


## Applications

Flavin-dependent halogenases catalyse halogenation of aromatic compounds.



## Kit description

The kit contains 50 diverse pre-formulated Flavin Dependent Halogenase (FDH) biocatalysts as lyophilised powders, as well as pre-prepared phosphate buffer and a reaction mix for the cofactor recycle system.

### FDHs contained in the screening kit:

FDH-1	FDH-9	FDH-17	FDH-25	FDH-33	FDH-41	FDH-49
FDH-2	FDH-10	FDH-18	FDH-26	FDH-34	FDH-42	FDH-50
FDH-3	FDH-11	FDH-19	FDH-27	FDH-35	FDH-43	
FDH-4	FDH-12	FDH-20	FDH-28	FDH-36	FDH-44	
FDH-5	FDH-13	FDH-21	FDH-29	FDH-37	FDH-45	
FDH-6	FDH-14	FDH-22	FDH-30	FDH-38	FDH-46	
FDH-7	FDH-15	FDH-23	FDH-31	FDH-39	FDH-47	
FDH-8	FDH-16	FDH-24	FDH-32	FDH-40	FDH-48	

## Contents

FDHs	50 vials lyophilised powder (50 mg each)
Reaction mix*	5 vials (5 x 100 mg)
DMSO	2 vials (2 x 10 mL)
Fre (Flavin Reductase)	3 g
GDH	3 g
0.05 M Phosphate buffer (pH 7)	1 bottle (200 mL)

\*Once dissolved in 30 mL phosphate buffer, reaction mix contains 3 mg/mL glucose monohydrate, 2 mg/mL NaBr, 0.06 mg/mL NAD, 0.08 mg/mL FAD and 4 mg/mL GDH.

## Screening Procedure

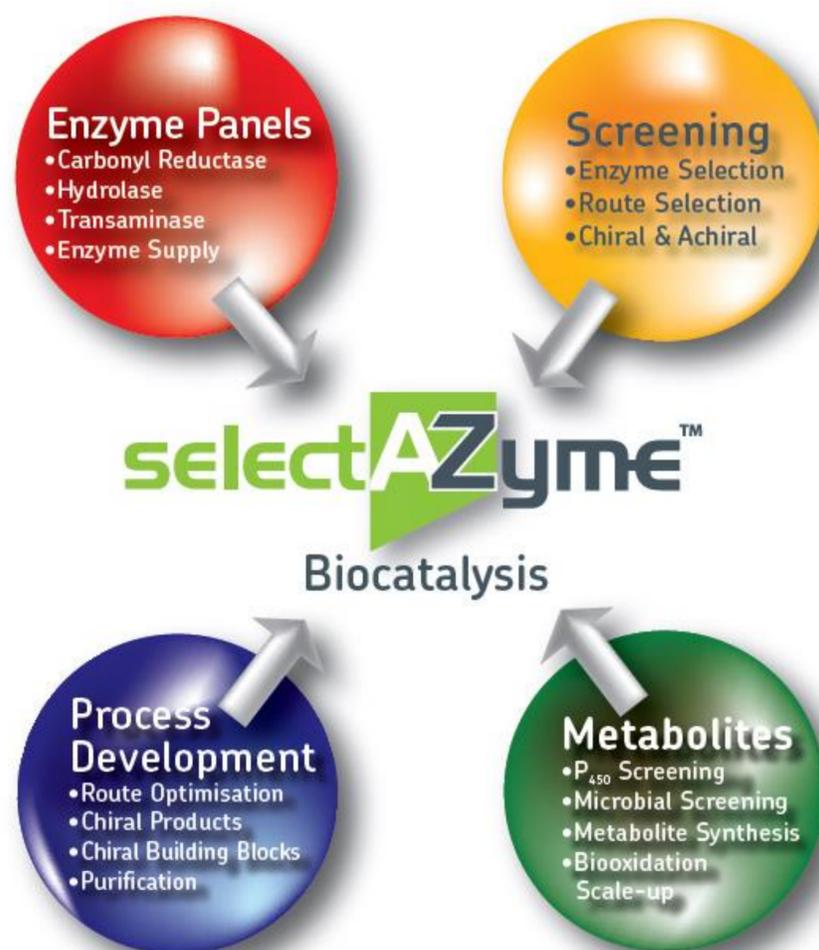
1. Label 50 x 1.5 mL tubes corresponding to the 50 FDHs provided in the kit (listed in the table above).
2. Add FDH (10 mg), Fre (10 mg) and GDH (10 mg) to each tube.
3. Dissolve the reaction mix (1 vial) in phosphate buffer (30 mL).\*\*
4. Once dissolved, add reaction mix solution (500 µL) to each tube.
5. Add a solution of substrate (5-10 mg) in DMSO (25-50 µL, depending on solubility).
6. Shake at room temperature (or ideally 28 °C) overnight.
7. Extract product with an organic solvent (MTBE, EtOAc etc.).
8. 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 all components is provided for five screens. Additional GDH, buffer, glucose monohydrate or NAD can be purchased from Almac if required.

**Storage:** The screening kit should be stored in a refrigerator at 4 °C to preserve enzyme activity.

## 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 unique selectAZyme platform offers a range of enzymes suitable for carrying out a wide variety of chemical reactions. Our biocatalysts are prepared in easy to use kits for rapid customer evaluation without any IP issues. These include the following:

### Carbonyl Reductase (CRED) biocatalysts

>300 CREDs for the production of chiral alcohols from pro-chiral ketones

### Hydrolase biocatalysts

>100 hydrolases for selective hydrolysis in aqueous media, selective acylation in non-aqueous media, resolution of secondary alcohols, amines and thiols, formation of peptides

### Nitrilase biocatalysts

>200 nitrilases for the synthesis of carboxylic acids by enzymatic hydrolysis of nitriles

### Transaminase (TAm) biocatalysts

>200 TAmS for the production of chiral amines by asymmetric synthesis from pro-chiral ketones or resolution of racemic amines

### Ene Reductase (ERED) biocatalysts

>200 EREDs for asymmetric reduction of activated alkenes

For the full range of enzyme screening kits on offer, please check the Almac website

## 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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