

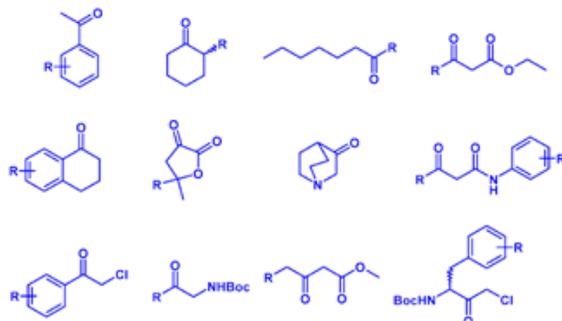
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Applications

Synthesis of enantiomerically pure (R) or (S) alcohols by enzymatic reduction of carbonyl compounds.

Substrate range

A wide variety of structurally diverse carbonyl compounds, including aliphatic & aromatic ketones, diketones, ketoesters, ketoamides, ketoacids, cyclic ketones and aldehydes. A selection is shown to the right.



Kit Description

Kit **96-8150** contains 40 diverse pre-formulated carbonyl reductase (CRED) biocatalysts as lyophilised powders, as well as pre-prepared phosphate buffer and a reaction mix for the cofactor recycle system. Note that for some enzymes, it is possible to recycle cofactor using a low-cost alcohol donor such as isopropyl alcohol (IPA).

Contents

CREDs	Reaction mix*	DMSO	Phosphate buffer salts**
40 vials lyophilised powder (50 mg each)	5 vials (5 x 2.38 g) *Once dissolved in 35 mL phosphate buffer, reaction mix contains 60 mg/mL glucose monohydrate, 2 mg/mL NAD, 2 mg/mL NADP and 4 mg/mL GDH.	2 vials (2 x 10 mL)	3.2 g **Once dissolved in 200 mL distilled water buffer is 0.1 M, pH 7.0.

Screening Procedure

- Label 40 x 1.5 mL tubes corresponding to the different CREDs provided in the kit (listed in the table to the right) and add 10 mg of the corresponding enzyme.
- Dissolve phosphate buffer salts in 200 mL of distilled water.
- Dissolve the reaction mix (1 vial) in 35 mL of phosphate buffer.***
- Once dissolved, add 500 µL of the reaction mix solution to each tube containing 10 mg CRED.
- Add a solution of 5-10 mg substrate in DMSO (25-50 µL, depending on solubility).
- Shake at room temperature (or ideally 30 °C). Agitate overnight.
- Extract product with an organic solvent (MTBE, EtOAc etc.).
- Analyse sample by GC/HPLC to determine conversion and product ee.

CREDs contained in the screening kit:

25	156	A121	A281	A531
33	164	A131	A301	A551
37	167	A141	A401	A601
41	182	A161	A411	A631
44	186	A171	A451	A641
52	190	A181	A471	A701
61	202	A201	A501	A731
153	A101	A231	A521	N151

***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.

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

*This is a screening kit and is not guaranteed to work in your application.