Ketoreductase (KRED)

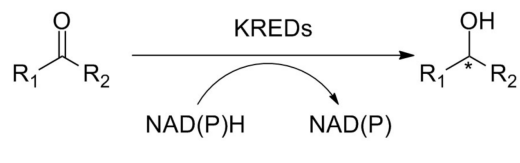
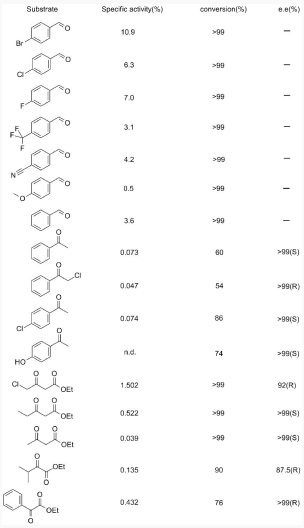
Cat. No. KRED-07 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	
Description	KRED could be widely used in regio- and stereoselective reduction of aldehydes, beta-ketone esters, α-ketone esters and ketones. Also called "Carbonyl reductase", are enzymes that catalyze the reversible redox reaction between aldehydes/ketones and alcohols, and need coenzymes as H transmitter such as NADH or NADPH. There are three main categories of KRED: Short-chain Dehydrogenase/Reductases (SDRs), Medium-chain Dehydrogenases/Reductases (MDRs), and Aldo-KetoReductases (AKRs). The catalytic functions of the three are similar, but the structure and properties are quite different.
Applications	1. Enzyme screening should be carried out for specific substrates because of the substrate specificity, and get an enzyme that catalyzes the target substrate with best catalytic effect. 2. Never contact with extreme conditions such as: high temperature, high/low pH and organic solvent with high concentration. 3. Normally, the reaction system should include substrate, buffer solution, coenzymes(NAD(H) or NADP(H)), coenzyme regeneration system(e.g. glucose and glucose dehydrogenase). 4. KRED should be added last into reaction system, after the pH and temperature been adjusted to the reaction condition. 5. All kinds of KRED have various optimum reaction conditions, so each of them should be further studied individually.
Advantages	1. High substrate specificity. 2. Strong chiral selectivity. 3. High conversion efficiency. 4. Less by-products. 5. Mild reaction conditions. 6. Environmentally friendly.

GENE INFORMATION

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Official Symbol	KRED
Synonyms	Ketoreductase; KRED
Catalytic reaction type	
Application Examples	

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Application Examples

Substrate	Product	Conversion(%)	e.e(%)
		70.8±0.9	>99(S)
		74.5±0.9	>99(R)
		72.8±2.0	>99(R)
		100±0	>99(R)
		49.6±1.8	>99(S)
		56.0±0.7	>99(S)
		100±0	>99(S)
		33.2±0.6	>99(S)
		66.8±2.1	>99(S)
		100±0	>99(S)
		100±0	>99(R)
		100±0	>99(S)

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