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Glucose Dehydrogenase (GDH)

Glucose dehydrogenase (GDH) catalyzes the oxidation of D-glucose to D-gluconolactone, which naturally hydrolyzes to gluconic acid, while reducing NAD^+ or $NADP^+$ to NADH or NADPH. This reaction enables efficient in situ cofactor regeneration, minimizing dependence on costly nicotinamide cofactors and supporting continuous biocatalytic processes.

By integrating GDH into enzymatic workflows, cofactor recycling becomes self-sustaining — lowering material costs, improving process efficiency, and enhancing scalability for redox biotransformations in pharmaceutical, chemical, and biomanufacturing applications. Its robustness and substrate versatility make GDH an ideal partner for dehydrogenases, oxidoreductases, and multi-enzyme cascade systems.

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Product Overview

At Allozymes, we harness Glucose Dehydrogenase (GDH) to enable efficient in situ cofactor regeneration for redox biocatalysis. GDH catalyzes the oxidation of D-glucose to D-gluconolactone, which hydrolyzes to gluconic acid while reducing NAD+ or NADP+ to NADH or NADPH. This reaction embeds continuous cofactor recycling directly into the process, minimizing reliance on costly nicotinamide cofactors.

Our GDH enzymes deliver high turnover, stability, and broad compatibility across diverse dehydrogenase and oxidoreductase systems. Operating under mild, aqueous conditions, they support clean, scalable, and sustainable redox transformations ideal for pharmaceutical synthesis, chemical manufacturing, and bioprocess development.

Product Specifications

Product Name	Glucose Dehydrogenase
Applications	KRED, ADH, AmDH, AADH, and P450 Biocatalytic Processes
Operational Stability	• Active at temperatures up to 50°C • Maintains activity across pH 6–10 • Tolerates organic solvents, including DMSO concentrations up to 30%
Form	Freeze-dried powder
Storage	-20°C