

## Aldose-reductase Protein, Human

Cat. No.:	HY-P701972
Synonyms:	AKR1B10; Aldo-keto reductase family 1 member B10; ARL-1; Aldose reductase-like; Aldose reductase-related protein; ARP; hARP; Small intestine reductase; SI reductase
Species:	Human
Source:	E. coli
Accession:	O60218 (M1-Y316)
Gene ID:	57016
Molecular Weight:	Approximately 36 kDa

### PROPERTIES

Appearance	Solution
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, 200 mM NaCl, 20% glycerol, 1 mM DTT, pH 7.5.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice

### DESCRIPTION

Background	Aldose reductase, a multifunctional enzyme, catalyzes the NADPH-dependent reduction of a diverse range of carbonyl-containing compounds, converting them into their corresponding alcohols. Notably, it exhibits robust enzymatic activity towards various retinal isomers, including all-trans-retinal, 9-cis-retinal, and 13-cis-retinal. The enzyme plays a pivotal role in the detoxification of unsaturated carbonyls derived from the diet and lipids, such as crotonaldehyde, 4-hydroxynonenal, trans-2-hexenal, trans-2,4-hexadienal, and their glutathione-conjugates carbonyls (GS-carbonyls). Remarkably, despite its broad substrate specificity, Aldose reductase does not display reductase activity towards glucose. This diverse catalytic repertoire highlights its significance in cellular detoxification processes and underscores its potential therapeutic implications in addressing oxidative stress-related conditions.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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