PTGR1 Protein, Human (HEK293, His)

Cat. No.:	HY-P701217
Synonyms:	DIG-1; LTB4DH; PGR1; ZADH3
Species:	Human
Source:	HEK293
Accession:	Q14914 (M1-A329)
Gene ID:	22949
Molecular Weight:	Approximately 38 kDa

PROPERTIES

AA Sequence	M V R T K T W T L K K H F V G Y P T N S D F E L K T S E L P P L K N G E V L L E A L F L T V D P Y M R V A A K R L K E G D T M M G Q Q V A K V V E S K N V A L P K G T I V L A S P G W T T H S I S D G K D L E K L L T E W P D T I P L S L A L G T V G M P G L T A Y F G L L E I C G V K G G E T V M V N A A A G A V G S V V G Q I A K L K G C K V V G A V G S D E K V A Y L Q K L G F D V V F N Y K T V E S L E E T L K K A S P D G Y D C Y F D N V G G E F S N T V I G Q M K K F G R I A I C G A I S T Y N R T G P L P P G P P P E I V I Y Q E L R M E A F V V Y R W Q G D A R Q K A L K D L L K W V L E G K I Q Y K E Y I I E G F E N M P A A F M G M L K G D N L G K T I V K A
Appearance	Lyophilized powder
Formulation	Lyophilized from sterile 25 mM Tris-HCl, 100 mM glycine, pH 7.3, 10% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	PTGR1 is a NAD(P)H-dependent oxidoreductase actively involved in the metabolic inactivation of both pro- and anti-inflammatory eicosanoids, including prostaglandins (PG), leukotrienes (LT), and lipoxins (LX). This enzyme exhibits high efficiency in catalyzing the reduction of the 13,14 double bond of various 15-oxoPGs, such as 15-oxo-PGE1, 15-oxo-PGE2, 15-

oxo-PGF1-alpha, and 15-oxo-PGF2-alpha. Additionally, PTGR1 demonstrates lower efficiency in oxidizing the hydroxyl group at C12 of LTB4 and its derivatives, converting them into less biologically active 12-oxo-LTB4 metabolites. Furthermore, PTGR1 plays a role in the metabolic detoxification of alkenals and ketones, showing a preference for alpha,beta-unsaturated alkenals and ketones with medium-chain length, including (2E)-decenal and (3E)-3-nonen-2-one. This multifaceted enzymatic activity suggests a significant role for PTGR1 in regulating inflammatory responses and detoxifying cytotoxic lipid constituents, such as 4-hydroxy-2-nonenal, thereby contributing to cellular homeostasis.

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