

## 15 Lipoygenase 2 Protein, Human (sf9, His-GST)

<b>Cat. No.:</b>	HY-P74436
<b>Synonyms:</b>	Polyunsaturated fatty acid lipoxygenase ALOX15B; 15-LOX-2; ALOX15B
<b>Species:</b>	Human
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	O15296 (M1-I676)
<b>Gene ID:</b>	247
<b>Molecular Weight:</b>	Approximately 93 kDa

### PROPERTIES

<b>Biological Activity</b>	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, 10% Glycerol, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

15-Lipoxygenase 2 (15-LOX2) is a non-heme iron-containing dioxygenase with a crucial role in catalyzing stereo-specific peroxidation of both free and esterified polyunsaturated fatty acids (PUFAs), generating a diverse array of bioactive lipid mediators. This enzyme exhibits peroxidase activity on arachidonate, producing (15S)-hydroperoxyeicosatetraenoate/(15S)-HPETE, and on linoleate, generating 13-hydroperoxyoctadecadienoate/13-HPODE. Moreover, it oxygenates arachidonyl derivatives such as 2-arachidonoylglycerol (2-AG), leading to the production of 15-hydroxyeicosatetraenoyl glycerol (15-HETE-G), which acts as a peroxisome proliferator-activated receptor alpha agonist. 15-LOX2 efficiently class-switches pro-inflammatory mediators into anti-inflammatory intermediates and participates in the sequential oxidations of docosahexaenoate (DHA) to generate specialized pro-resolving mediators (SPMs) like resolvin D5. Besides its role in lipid metabolism, 15-LOX2 may influence cell cycle progression, cell proliferation, cytokine secretion by macrophages, and macrophage differentiation into proatherogenic foam cells. Importantly, it does not convert arachidonic acid to 15S-hydroperoxyeicosatetraenoic acid/(15S)-HPETE, highlighting its substrate specificity.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA