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Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION

IDO1 (human, recombinant)

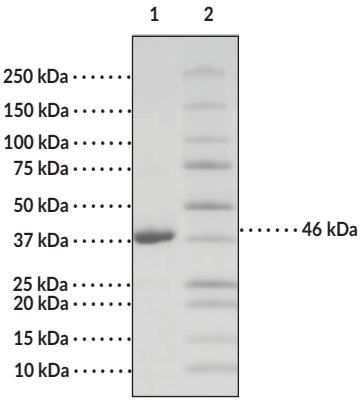
Item No. 32559

Overview and Properties

Synonyms:	Indoleamine 2,3-dioxygenase 1, Indoleamine-pyrrole 2,3-dioxygenase
Source:	Active recombinant human N-terminal His-tagged IDO1 expressed in *E. coli*
Amino Acids:	2-403 (full length)
Uniprot No.:	P14902
Molecular Weight:	46 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	***batch specific*** (≥90% estimated by SDS-PAGE)
Supplied in:	40 mM Tris-HCl, pH 8.0, with 110 mM sodium chloride, 2.2 mM potassium chloride, and 20% glycerol
Protein Concentration:	***batch specific*** mg/ml
Activity:	IDO1 activity is measured by incubating with L-Trp substrate. After a three hour room temperature incubation, activity is determined by measuring the absorption of reaction product at λ = 320-325 nm

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

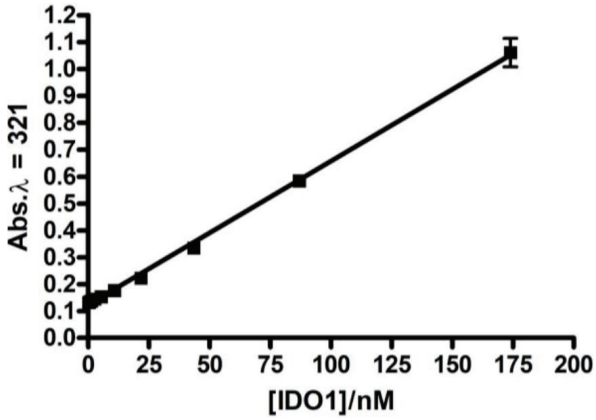
Images



Lane 1: IDO1 (2 µg)
Lane 2: MW Markers

SDS-PAGE Analysis of IDO1.

Representative gel image shown; actual purity may vary between each batch.



IDO1 Specific Activity

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PRODUCT INFORMATION

Description

Indoleamine 2,3-dioxygenase 1 (IDO1) is a cytosolic heme-containing enzyme involved in tryptophan catabolism that mediates multiple immunomodulatory processes.[1,2] It exists as a monomer and is composed of a large catalytic domain, which contains the heme group, and a small non-catalytic domain with two immunoreceptor tyrosine-based inhibition motifs (ITIMs) that regulate intracellular signaling.[3,4] IDO1 catalyzes the oxidation of L-tryptophan (Item No. 29600) to N-formylkynurenine, the first and rate-limiting step of the kynurenine pathway, leading to the production of several metabolites of kynurenine (Item No. 11305), including 3-hydroxy anthranilic acid (Item No. 20512), that have immunoprotective and immunosuppressive effects.[1] IDO1 is widely expressed in several lymphoid and non-lymphoid organs, including lymph nodes, spleen, tonsils, lungs, and intestine, as well as immune cells, including macrophages and dendritic cells (DCs), and endothelial cells.[1] IDO1 activity is regulated at the transcriptional level where expression of *IDO1* is increased by the transcription factors NF-κB, aryl hydrocarbon receptor (AhR), and CCTF, which are induced by stimulation with toll-like receptor (TLR) ligands or cytokines and inhibited by hypoxia.[1] IDO1 activity can also be inhibited at the protein level by peroxynitrite (Item No. 81565), leading to IDO1 inactivation, or suppressor of cytokine signaling 3 (SOCS3), which binds to and targets IDO1 for proteasomal degradation. Increased IDO1 activity is associated with numerous pathological conditions, including atherosclerosis, autoimmunity, HIV, and cancer. Cayman's IDO1 (human, recombinant) protein can be used for enzyme assay applications. This protein consists of 402 amino acids and has a calculated molecular weight of 46 kDa.

References

1. Hornyák, L., Dobos, N., Koncz, G., *et al*. The role of indoleamine-2,3-dioxygenase in cancer development, diagnostics, and therapy. *Front. Immunol.* **9**, 151 (2018).
2. Röhrig, U.F., Majjigapu, S.R., Vogel, P., *et al*. Challenges in the discovery of indoleamine 2,3-dioxygenase 1 (IDO1) inhibitors. *J. Med. Chem.* **58(24)**, 9421-9437 (2015).
3. Coletti, A., Greco, F.A., Dolciami, D., *et al*. Advances in indoleamine 2,3-dioxygenase 1 medicinal chemistry. *Med. Chem. Commun.* **8(7)**, 1378-1392 (2017).
4. Cheong, J.E. and Sun, L. Targeting the IDO1/TDO2–KYN–AhR pathway for cancer immunotherapy – challenges and opportunities. *Trends Pharmacol. Sci.* **39(3)**, 307-325 (2018).

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