

Recombinant IDO1 protein

Catalog No: 81031, 81731

Lot No: 24317001

Expressed In: *E. coli*

Quantity: 100,1000 µg

Concentration: 1 µg/µl

Source: Human

Buffer Contents: Recombinant IDO1 protein is supplied in 25 mM Tris-HCl pH 8.0, 300 mM NaCl, 10% glycerol and 0.5 mM TCEP.

Background: IDO1 (Indoleamine 2,3-dioxygenase 1, also known as IDO, INDO, or IDO-1) is a heme enzyme that catalyzes the first and rate-limiting step in tryptophan catabolism to N-formyl-kynurenine. Tryptophan shortage inhibits T lymphocytes division and accumulation of tryptophan catabolites induces T-cell apoptosis and differentiation of regulatory T-cells. This enzyme is thought to play a role in a variety of pathophysiological processes such as antimicrobial and antitumor defense, neuropathology, immunoregulation, and antioxidant activity. Through its expression in dendritic cells, monocytes, and macrophages this enzyme modulates T-cell behavior by its peri-cellular catabolization of the essential amino acid tryptophan. IDO1 acts on multiple tryptophan substrates including D-tryptophan, L-tryptophan, 5-hydroxy-tryptophan, tryptamine, and serotonin.

Protein Details: Recombinant IDO1 was expressed in *E. coli* cells as the full length protein (accession number NP_002155.1) with an N-terminal 6×His tag. The molecular weight of the protein is 47.5 kDa.

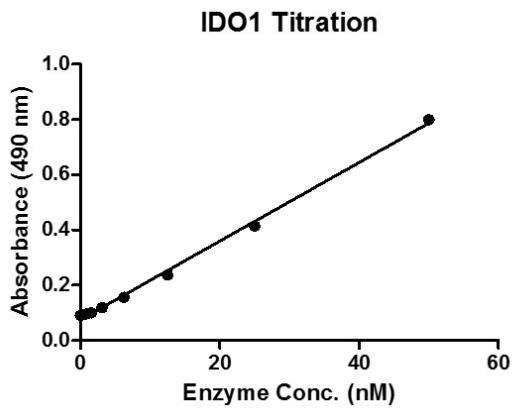
Application Notes: This protein is useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

Activity Assay Conditions: 400 µM L-tryptophan was incubated with different concentrations of IDO1 protein in reaction buffer including 50 mM potassium phosphate pH 6.5, 20 mM ascorbic acid, 10 µM methylene blue and 200 µg/ml catalase for 1 hr at 37°C. The total 200 µl reaction was stopped by the addition of 40 µl 30% (w/v) trichloroacetic acid and heated at 65°C for 15 min. After cooled down to 4°C, the reaction was centrifuged at 1,125 g for 10 min. 100 µl supernatant was transferred into 96-well plate and mixed with 100 µl of 2% (w/v) p-DMAB in acetic acid. The yellow pigment derived from kynurenine was measured at 490 nm.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.



Recombinant IDO1 protein gel
10% SDS-PAGE Coomassie staining
MW: 47.5 kDa
Purity: > 90%



Recombinant IDO1 protein activity assay
400 μ M L-tryptophan was incubated with different concentrations of IDO1 protein in reaction buffer mixture. The reaction was stopped by the addition of 40 μ l 30% (w/v) trichloroacetic acid and heated at 65°C for 15 min. After cooling down to 4°C, the reaction was centrifuged at 1,125 g for 10 min. 100 μ l supernatant was transferred into 96-well plate and mixed with 100 μ l of 2% (w/v) p-DMAB. The yellow pigment derived from kynurenine was measured at 490 nm.