Product datasheet

Indoleamine 2,3-Dioxygenase 1 (IDO1) Activity Assay Kit ab235936

Overview

Product name: Indoleamine 2,3-Dioxygenase 1 (IDO1) Activity Assay Kit
Detection method: Fluorescent
Sample type: Cell culture extracts, Tissue Extracts

Product overview: Indoleamine 2,3-Dioxygenase 1 (IDO1) Activity Assay Kit (ab235936) enables IDO1 activity to be easily determined in mammalian tissues and cell lines. The assay uses a fluorogenic developer that selectively reacts with N-formylkynurenine (NFK) to produce a highly fluorescent product (Ex/Em = 402/88 nm), ensuring a high signal-to-background ratio. The kit also includes a highly selective IDO1 inhibitor for verification of enzyme activity in biological matrices. The assay has a simple no-wash protocol, is high-throughput adaptable and can detect down to 0.2 mU of IDO1 activity or 200 pmole NFK.

Notes: Indoleamine 2,3-Dioxygenase 1 (IDO1, EC 1.13.11.52) is a cytoplasmatic hemoprotein that oxidizes tryptophan yielding N-formylkynurenine (NFK). In mammals, this reaction is the first and rate limiting step in the kynurenine catabolic pathway. IDO1 activity is low under normal physiological conditions, but is dramatically upregulated by proinflammatory cytokines such as interferon-γ. This short-term activation of IDO1 occurs as part of the innate immune response and helps to inhibit the growth of pathogens and parasites. IDO1 activation can also promote host immuno tolerance by exerting an immunosuppressive effect. IDO1 expression by tumor cells plays a substantial role in tumor immune tolerance, aiding tumors in evading detection and destruction. Chronic induction of IDO1 expression has been found in cancer patients increased IDO1 activity is correlated with negative prognosis. IDO1 has thus become an attractive pharmacological target for development of novel antineoplastics and adjuvants to increase the efficacy of conventional chemotherapy.

Platform: Microplate reader

Storage instructions: Store at -20°C. Please refer to protocols.

Components

<table>
<thead>
<tr>
<th>Component</th>
<th>100 tests</th>
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<tr>
<td>IDO1 Assay Buffer</td>
<td>1 x 50ml</td>
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Function
Catalyzes the cleavage of the pyrrol ring of tryptophan and incorporates both atoms of a molecule of oxygen.

Pathway
Amino-acid degradation; L-tryptophan degradation via kynurenine pathway; L-kynurenine from L-tryptophan: step 1/2.

Sequence similarities
Belongs to the indoleamine 2,3-dioxygenase family.

Images
The reaction of 1 mole of NFK with Fluorogenic Developer corresponds to the metabolism of one mole of L-tryptophan by IDO1.
Measurement of IDO1 Positive Control in presence and absence of 1 µM of the included selective inhibitor IDO5L.

IDO1 activity in lysates (30 µL) of human cancer cell lines stimulated with vehicle (dH2O) or 100 ng/mL human interferon-γ for 24 hours prior to assay.

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