abcam

ab77481

Anti-DIO2 antibody

Key facts

Isotype	IgG
Host species	Goat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: Tris buffered saline, 0.5% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human DIO2. The exact immunogen used to generate this antibody is proprietary information. Database link Q92813
Purification technique	Affinity purification Immunogen
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.

Reactivity data

ICC

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Rabbit, Goat, Chicken, Cow, Pig
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	2-3 µg/mL
Notes	Tissue sections were PFA fixed.

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Rabbit, Goat, Chicken, Cow, Pig
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Rat, Rabbit, Goat, Chicken, Cow, Pig
Dilution info	-
Notes	-

Target data

See full target information DIO2

Function	Plays a crucial role in the metabolism of thyroid hormones (TH) and has specific roles in TH activation and inactivation by deiodination (PubMed:12586771, PubMed:11108274, PubMed:10403186, PubMed:18821722). Catalyzes the deiodination of L-thyroxine (T4) to 3,5,3'-triiodothyronine (T3), 3,3',5'-triiodothyronine (rT3) to 3,3'-diiodothyronine (3,3'-T2) and 3',5'-diiodothyronine (3',5'-T2) to 3'-monoiodothyronine (3'-T1) via outer-ring deiodination (ORD) (PubMed:12586771, PubMed:11108274, PubMed:10403186, PubMed:18821722, PubMed:18339710). Catalyzes the phenolic ring deiodinations of 3,3',5'-triiodothyronamine and 3',5'- diiodothyronamine (PubMed:18339710).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	'DIO2' also known as Type II iodothyronine deiodinase is an enzyme responsible for the conversion of thyroxine (T4) to the active hormone triiodothyronine (T3) by removal of an iodine atom. This transformation is important for regulating thyroid hormone activity. DIO2 has a molecular mass of approximately 58 kDa and is expressed predominantly in tissues such as the brain pituitary gland brown adipose tissue and skeletal muscle. It plays an integral role in maintaining intracellular T3 levels necessary for various physiological functions.
Biological function summary	DIO2 modulates local T3 availability which impacts metabolic rate thermogenesis and development. DIO2 is not part of a protein complex but interacts closely with thyroid hormone receptors that are activated by the produced T3. In adipocytes and myocytes DIO2-mediated T3 generation ensures the hormones' optimal action affecting processes such as energy expenditure and muscle function. This activity is critical in adapting to changing metabolic demands.
Pathways	DIO2 is integral to the thyroid hormone signaling pathway significantly influencing processes governed by thyroid hormone function. By converting T4 to T3 DIO2 interacts with thyroid hormone receptors and influences downstream effectors linked to metabolism and growth. DIO2 activity is regulated via the hypothalamic-pituitary-thyroid axis ensuring proper feedback loops and homeostasis. Additionally it is related to other deiodinases like DIO1 and DIO3 which also participate in thyroid hormone modification.
Associated diseases and disorders	Alterations in DIO2 expression or activity have been linked to thyroid-related conditions such as hypothyroidism and Graves' disease. In hypothyroidism decreased DIO2 activity could lead to reduced local T3 levels affecting cellular metabolism. In Graves' disease overactive DIO2 may result in excessive T3 production exacerbating symptoms. DIO2's action further connects with thyroid hormone receptor beta (THRB) where abnormalities can contribute to resistance to thyroid hormones influencing disease progression and treatment outcomes.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

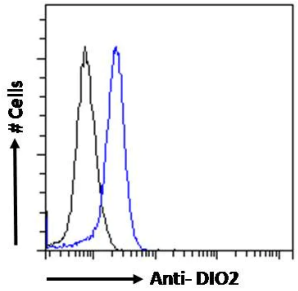
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

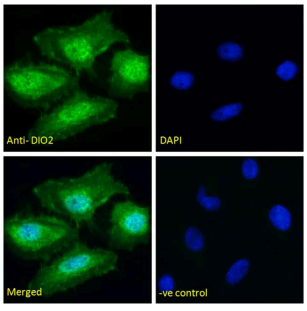
3 product images



Flow Cytometry (Intracellular) - Anti-DIO2 antibody (ab77481)

DIO2 Flow Cytometry (Intracellular) staining using goat Anti-DIO2 antibody

Flow cytometric analysis of paraformaldehyde fixed MCF7 cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr at 10 µg/mL followed by Alexa Fluor 488 secondary antibody at 1 µg/mL. IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.



Immunocytochemistry - Anti-DIO2 antibody (ab77481)

DIO2 Immunocytochemistry staining using goat Anti-DIO2 antibody

Immunocytochemistry analysis of HeLa cells labelling DIO2 with ab77481 at 10 µg/mL. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.15% Triton X-100. Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 2 µg/mLwas used as the secondary antibody (green) showing nuclear and cytoplasmic staining. The nuclear stain is DAPI (blue). Negative control: Unimmunized goat IgG (10ug/ml) followed by Alexa Fluor 488 secondary antibody (2ug/ml).



Immunohistochemistry (Frozen sections) - Anti-DIO2 antibody (ab77481)

DIO2 Immunohistochemistry (Frozen sections) staining using goat Anti-DIO2 antibody

ab77481 staining DIO2 in mouse Brain (Hippocampus) tissue section by Immunohistochemistry (Frozen sections). Tissue underwent antigen retrieval in microwave with citrate buffer (pH 4.5). The HRP-staining procedure was used for detection.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.