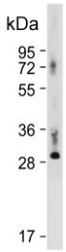
DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody (F55036)

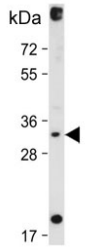
Catalog No.	Formulation	Size
F55036-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F55036-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

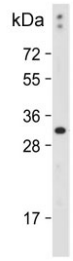
Availability	1-3 business days
Species Reactivity	Human, Rat
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
UniProt	P55073
Localization	Cytoplasmic, cell membrane
Applications	Western blot: 1:1000-1:2000 IHC Immunohistochemistry (FFPE): 1:50-1:100
Limitations	This DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody is available for research use only.



DIO3 Antibody Placenta WB. Western blot analysis of human placental tissue lysate using DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody demonstrates a prominent immunoreactive band at approximately 31â€“37 kDa, consistent with the expected molecular weight range of DIO3 (Iodothyronine Deiodinase 3). DIO3 is the principal thyroid hormone-inactivating enzyme responsible for converting thyroxine (T4) and triiodothyronine (T3) into inactive metabolites, thereby regulating tissue-specific thyroid hormone availability. The strong signal observed in placental tissue is consistent with the important role of DIO3 in controlling fetal thyroid hormone exposure and maintaining endocrine homeostasis during development. Predicted molecular weight: ~34 kDa. Observed molecular weight: 31â€“37 kDa.



DIO3 Antibody HepG2 WB. Western blot analysis of human HepG2 cell lysate using DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody demonstrates a distinct immunoreactive band at approximately 31â€“37 kDa, consistent with the expected molecular weight range of DIO3 (Iodothyronine Deiodinase 3). DIO3 is a selenoprotein enzyme that catalyzes the inactivation of thyroid hormones, thereby regulating local thyroid hormone availability and endocrine signaling. Expression of DIO3 in HepG2 cells is consistent with its role in tissue-specific control of thyroid hormone metabolism and cellular homeostasis. The observed band supports specific detection of endogenous DIO3 and demonstrates the utility of this antibody for western blot applications. Predicted molecular weight: ~34 kDa. Observed molecular weight: 31â€“37 kDa.



DIO3 Antibody Rat Skeletal Muscle WB. Western blot analysis of rat skeletal muscle tissue lysate using DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody demonstrates a distinct immunoreactive band at approximately 31â€“37 kDa, consistent with the expected molecular weight range of DIO3 (Iodothyronine Deiodinase 3). DIO3 functions as the primary thyroid hormone-inactivating deiodinase, catalyzing the conversion of thyroxine (T4) and triiodothyronine (T3) into inactive metabolites that regulate tissue-specific thyroid hormone signaling. Detection of DIO3 in skeletal muscle supports its role in controlling local endocrine activity, energy metabolism, and physiological adaptation within metabolically active tissues. The observed band demonstrates specific recognition of endogenous DIO3 and supports the utility of this antibody for western blot applications. Predicted molecular weight: ~34 kDa. Observed molecular weight: 31â€“37 kDa.



DIO3 Antibody Hepatocellular Carcinoma IHC. Immunohistochemical staining of FFPE human hepatocellular carcinoma tissue using DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody demonstrates cytoplasmic HRP-DAB brown staining within malignant hepatocyte-like tumor cells. The staining pattern is consistent with expression of DIO3 (Iodothyronine Deiodinase 3), the principal thyroid hormone-inactivating enzyme responsible for regulating local concentrations of thyroxine (T4) and triiodothyronine (T3). Positive immunoreactivity within neoplastic hepatic tissue highlights the role of DIO3 in controlling tissue-specific thyroid hormone signaling, metabolic regulation, and cellular growth pathways. These findings support the utility of DIO3 as a marker for studies of endocrine metabolism and thyroid hormone homeostasis in liver malignancies. HIER: steam section in pH6 citrate buffer for 20 min and allow to cool prior to staining.

Description

DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody recognizes DIO3 (Iodothyronine Deiodinase 3), a selenoprotein enzyme that serves as the principal inactivator of thyroid hormones in vertebrate tissues. DIO3 catalyzes the conversion of thyroxine (T4) to reverse triiodothyronine (rT3) and triiodothyronine (T3) to diiodothyronine (T2), thereby reducing local thyroid hormone activity. Through this enzymatic function, DIO3 plays a central role in maintaining thyroid hormone homeostasis and regulating tissue-specific endocrine signaling. Because thyroid hormones influence growth, metabolism, differentiation, and organ development, DIO3 is essential for controlling the magnitude and timing of hormonal responses throughout the body.

DIO3 Antibody is widely used for studying thyroid hormone metabolism and endocrine regulation. The biological effects of thyroid hormones are determined not only by circulating hormone concentrations but also by local activation and inactivation mechanisms within individual tissues. DIO3 functions as a critical counterbalance to activating deiodinases such as DIO1 and DIO2, preventing excessive thyroid hormone signaling and establishing tissue-specific hormone gradients. This regulatory network allows cells to fine-tune developmental and physiological responses according to changing metabolic and environmental demands.

DIO3 Antibody is particularly valuable for investigations of embryonic development and tissue differentiation. Precise control of thyroid hormone activity is essential during organogenesis, where inappropriate hormone exposure can disrupt developmental timing and cellular maturation. DIO3 expression is frequently observed in developing tissues and contributes to the regulation of signaling pathways that influence proliferation, differentiation, and morphogenesis. As a result, DIO3 has become an important marker for studies examining developmental endocrinology and the molecular mechanisms that coordinate vertebrate growth and tissue formation.

DIO3 Antibody also supports research involving neurodevelopment and nervous system function. Thyroid hormones play critical roles in neuronal differentiation, synapse formation, myelination, and brain maturation. By controlling local thyroid hormone availability, DIO3 helps establish appropriate signaling environments required for normal neural development and maintenance of nervous system homeostasis. Alterations in DIO3 expression or activity can influence developmental outcomes and have been implicated in disorders associated with abnormal thyroid hormone regulation.

DIO3 Antibody has significant relevance in metabolism, regenerative biology, and cancer research. Changes in thyroid hormone signaling can profoundly affect cellular metabolism, energy utilization, proliferation, and tissue remodeling. Abnormal DIO3 expression has been reported in several pathological conditions, including developmental disorders, tissue injury, and malignancy, where altered thyroid hormone metabolism may contribute to disease progression. Consequently, DIO3 is frequently evaluated as a biomarker of endocrine pathway activity and tissue-specific hormonal regulation.

DIO3 Antibody is also useful for studies of cardiovascular physiology and metabolic adaptation. Thyroid hormones influence heart rate, cardiac output, oxygen consumption, and energy metabolism, making local regulation of thyroid hormone activity an important determinant of tissue function. Through modulation of active hormone concentrations, DIO3 contributes to physiological adaptation in response to developmental, metabolic, and environmental cues.

DIO3 Antibody supports research involving thyroid hormone metabolism, endocrine signaling, developmental biology, neurodevelopment, metabolism, cardiovascular physiology, and disease-associated alterations in hormone regulation. As the primary thyroid hormone-inactivating deiodinase, DIO3 remains an important target for understanding how endocrine signals are controlled at the tissue level and how thyroid hormone homeostasis influences vertebrate development and physiology.

Researchers studying thyroid hormone metabolism, endocrine regulation, developmental signaling, and metabolic homeostasis may also be interested in our comprehensive collection of Metabolism Antibodies.

Application Notes

The stated application concentrations are suggested starting points. Titration of the DIO3 Antibody / Thyroid Hormone Metabolism Enzyme Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 250-278 from the human protein was used as the immunogen for the Thyroxine 5-deiodinase / DIO3 antibody.

Storage

Aliquot the Thyroxine 5-deiodinase / DIO3antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

DIO3 Antibody, Iodothyronine Deiodinase 3 Antibody, Type III Deiodinase Antibody, Thyroid Hormone Metabolism Enzyme Antibody, Thyroxine 5-Deiodinase Antibody, Thyroid Hormone Inactivation Enzyme Antibody, Deiodinase Type 3 Antibody, D3 Deiodinase Antibody

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