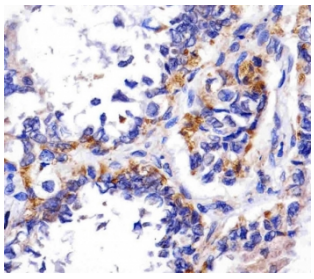
REDD-1 Antibody / mTOR Signaling Regulator Antibody (F54848)

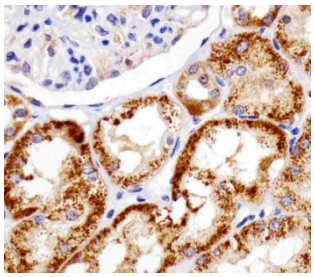
Catalog No.	Formulation	Size
F54848-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F54848-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

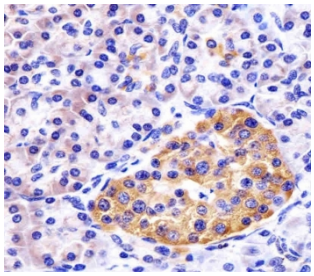
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity purified
UniProt	Q9NX09
Localization	Cytoplasmic
Applications	Western Blot : 1:1000-1:2000 Immunohistochemistry (FFPE) : 1:25
Limitations	This REDD-1 Antibody / mTOR Signaling Regulator Antibody is available for research use only.



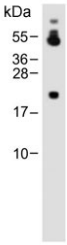
REDD-1 Antibody Human Adenocarcinoma IHC. IHC staining of FFPE human adenocarcinoma tissue with REDD-1 antibody demonstrated cytoplasmic staining in malignant epithelial cells, consistent with the expression pattern of REDD-1 (DDIT4), a stress-responsive regulator of mTOR signaling. REDD-1 is induced by hypoxia, oxidative stress, DNA damage, and metabolic challenges, where it functions to suppress mTOR activity and promote cellular adaptation to adverse conditions. The staining observed within tumor cells is consistent with activation of stress-response pathways commonly associated with the tumor microenvironment. Heat-induced epitope retrieval was performed by steaming tissue sections in pH 6 citrate buffer for 20 minutes and allowing them to cool prior to staining. These results support the utility of REDD-1 Antibody for studies of hypoxia signaling, mTOR pathway regulation, cellular stress responses, and cancer biology.



REDD-1 Antibody Human Kidney IHC. IHC staining of FFPE human kidney tissue with REDD-1 antibody demonstrated strong cytoplasmic staining of renal tubular epithelial cells, consistent with the expression pattern of REDD-1 (DDIT4), a stress-responsive regulator of mTOR signaling and cellular metabolism. REDD-1 is induced by hypoxia, oxidative stress, nutrient deprivation, and other cellular stressors, where it functions to suppress mTOR activity and promote adaptive survival responses. The prominent staining observed within renal tubules is consistent with the high metabolic activity of these cells and the importance of stress-response pathways in maintaining renal homeostasis. Heat-induced epitope retrieval was performed by steaming tissue sections in pH 6 citrate buffer for 20 minutes and allowing them to cool prior to staining. These results support the utility of REDD-1 Antibody for studies of hypoxia signaling, mTOR pathway regulation, cellular stress responses, and kidney biology.



REDD-1 Antibody Human Pancreas IHC. IHC staining of FFPE human pancreas tissue with REDD-1 antibody demonstrated moderate to strong cytoplasmic staining of pancreatic epithelial cells, with particularly prominent staining within islet cell populations. REDD-1, also known as DDIT4 (DNA Damage Inducible Transcript 4), is a stress-responsive regulator of mTOR signaling that is induced by hypoxia, oxidative stress, nutrient deprivation, and metabolic challenges. By suppressing mTOR activity, REDD-1 helps coordinate cellular adaptation and energy conservation under adverse conditions. The staining pattern observed is consistent with the high metabolic activity of pancreatic tissues and the importance of stress-response pathways in maintaining cellular homeostasis. Heat-induced epitope retrieval was performed by steaming tissue sections in pH 6 citrate buffer for 20 minutes and allowing them to cool prior to staining. These results support the utility of REDD-1 Antibody for studies of mTOR pathway regulation, cellular stress responses, metabolism, and pancreatic biology.



REDD-1 Antibody Human HeLa WB. Western blot analysis of REDD-1 expression was performed using anti-REDD-1 antibody in human HeLa cell lysate. REDD-1, also known as DDIT4 (DNA Damage Inducible Transcript 4), is a stress-responsive protein that functions as a negative regulator of mTOR signaling and is induced by hypoxia, oxidative stress, DNA damage, and nutrient deprivation. A specific immunoreactive band is detected at approximately 25 kDa, corresponding to the predicted molecular weight of REDD-1. Additional higher molecular weight bands may represent post-translationally modified forms, protein complexes, or reduced electrophoretic mobility frequently observed for stress-response proteins. Expression in HeLa cells is consistent with the established role of REDD-1 in regulating cellular adaptation to environmental and metabolic stress. These results support the utility of REDD-1 Antibody for studies of mTOR pathway regulation, hypoxia signaling, cellular stress responses, and cancer biology.

Description

REDD-1 Antibody / mTOR Signaling Regulator Antibody recognizes REDD-1 (Regulated in Development and DNA Damage Responses 1), also known as DDIT4, a stress-responsive protein that serves as a critical negative regulator of mTOR signaling. REDD-1 expression is rapidly induced by hypoxia, DNA damage, oxidative stress, nutrient deprivation, glucocorticoid exposure, and other cellular stressors. By suppressing mTOR complex 1 (mTORC1) activity, REDD-1 helps cells adapt to adverse environmental conditions by reducing energy consumption and limiting anabolic processes. REDD-1 Antibody / mTOR Signaling Regulator Antibody is widely used to investigate mechanisms that coordinate cellular growth, metabolism, and stress adaptation.

REDD-1 functions as an important signaling intermediary linking environmental stress signals to pathways controlling protein synthesis, autophagy, metabolism, and cell survival. Under normal growth conditions, mTOR promotes cellular proliferation and biosynthetic activity. During stress, however, REDD-1 expression increases and contributes to mTOR

inhibition, enabling cells to conserve resources and maintain homeostasis. This regulatory mechanism is particularly important during hypoxia and metabolic stress, where energy availability becomes limiting. REDD-1 Antibody / mTOR Signaling Regulator Antibody is therefore valuable for studies of nutrient sensing, metabolic regulation, and adaptive cellular responses.

Altered REDD-1 expression has been associated with numerous pathological conditions including cancer, neurodegenerative disorders, inflammatory diseases, metabolic dysfunction, and ischemic injury. In cancer, REDD-1 may function either as a tumor suppressor or a mediator of tumor adaptation to hypoxic environments, depending on cellular context. Elevated REDD-1 expression has also been linked to neuronal injury and stress-induced cell death in models of neurodegeneration. Because REDD-1 occupies a central position at the intersection of stress signaling and mTOR regulation, it has become an important biomarker and research target in multiple fields of biomedical investigation.

REDD-1 Antibody / mTOR Signaling Regulator Antibody supports studies of hypoxia signaling, mTOR pathway regulation, autophagy, oxidative stress, metabolism, and cellular adaptation. Researchers frequently use REDD-1 Antibody / mTOR Signaling Regulator Antibody to examine stress-induced signaling events, evaluate mTOR pathway activity, and investigate mechanisms that govern cell survival under challenging physiological and pathological conditions. Its established role as a key regulator of cellular stress responses makes REDD-1 an important target in both basic and translational research.

Learn more about proteins involved in stress signaling, mTOR pathway regulation, and cellular adaptation on our Signal Transduction Antibodies page.

Application Notes

The stated application concentrations are suggested starting points. Titration of the REDD-1 Antibody / mTOR Signaling Regulator Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 20-49 from the human protein was used as the immunogen for the REDD-1 antibody.

Storage

Aliquot the REDD-1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

REDD-1 antibody, DDIT4 antibody, RTP801 antibody, DNA Damage Inducible Transcript 4 antibody, Stress Response Protein antibody, mTOR Signaling Regulator antibody