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Datasheet for 209-301-A96

Thyroid Hormone Receptor beta Antibody

Overview

Description:	Anti-Thyroid Hormone Receptor beta (MOUSE) Monoclonal Antibody - 209-301-A96
Item No.:	209-301-A96
Size:	100 µL
Applications:	WB, IHC
Reactivity:	Human
Host Species:	Mouse

Product Details

Background:	Thyroid Hormone Receptor beta antibody detects Thyroid Hormone Receptor beta. Thyroid hormones are essential for development of the central nervous system and deficits in these hormones during development affects such cognitive functions as learning and memory. Thyroid hormones exert their physiological role mainly through binding to specific nuclear receptors including the predominant isoforms of thyroid hormone receptors TRα1, TRα2, TRβ1 and TRβ2. TRα1, TRβ1 and TRβ2 bind T3 with high affinity and also bind to thyroid hormone response elements (TREs) on chromatin to regulate the transcriptional processes in several target tissues, including adult rat brain. Thyroid Hormone Receptor beta antibody is ideal for investigators involved in Cell Signaling, Neuroscience, Signal Transduction research.
Synonyms:	mouse anti-Thyroid Hormone Receptor beta Antibody, mouse anti-Thrb antibody, Nuclear receptor subfamily 1 group A member 2, c-erbA-2, c-erbA-beta
Host Species:	Mouse
Clonality:	Monoclonal
Clone ID:	2386
Format:	IgG1

Target Details

Gene Name:	THRB
Reactivity:	Human
Immunogen Type:	Conjugated Peptide

Immunogen:	Anti-Thyroid Hormone Receptor beta monoclonal antibody was produced in mouse by repeated immunizations with synthetic peptide corresponding to amino acid residues from the N-terminal region of Thyroid Hormone Receptor beta.
Purity/Specificity:	Anti-Thyroid Hormone Receptor beta antibody is directed against human TRβ. Thyroid Hormone Receptor beta antibody is purified by Protein G chromatography from cell culture supernatant. This antibody is specific for the human protein. Cross reactivity from other sources has not been determined.
Relevant Links:	• UniProtKB - P10828 • GeneID - 7068 • NCBI - NP_000452.2

Application Details

Tested Applications:	WB
Suggested Applications:	IHC (Based on references)
Application Note:	Anti-Thyroid Hormone Receptor beta (Mouse) antibody is tested for use in Western Blotting. Expect a band of approximately 55 kDa corresponding to TR-β proteins in the appropriate cell lysate or extract. Researchers should determine optimal titers for applications that are not stated below.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
WB:	1:1000

Formulation

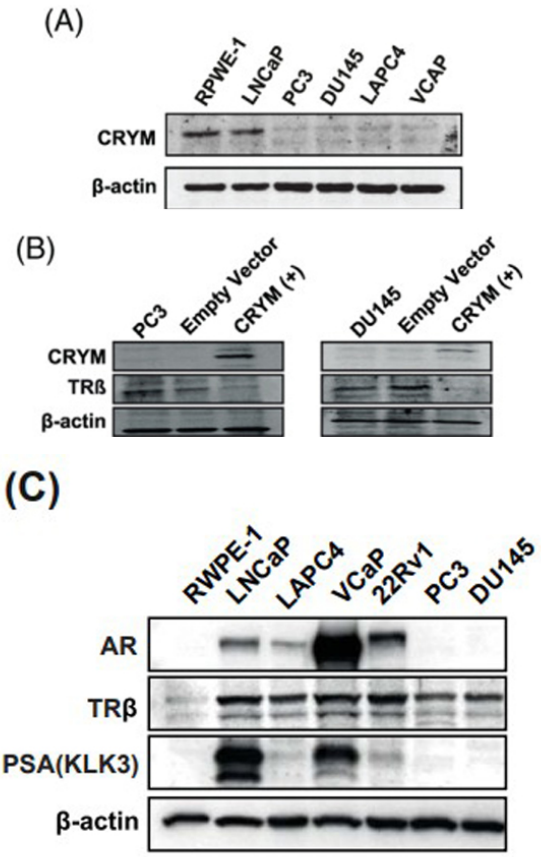
Physical State:	Liquid
Concentration:	n/a Each Sufficient to run approximately 10 miniblots
Buffer:	0.01 M HEPES, 0.15 M Sodium Chloride, pH 7.5
Stabilizer:	0.1 mg/ml Bovine Serum Albumin (BSA) - IgG and Protease free, 50% (v/v) Glycerol

Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C prior to opening. This product is stable at 4° C as an undiluted liquid. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Dilute only prior to immediate use.

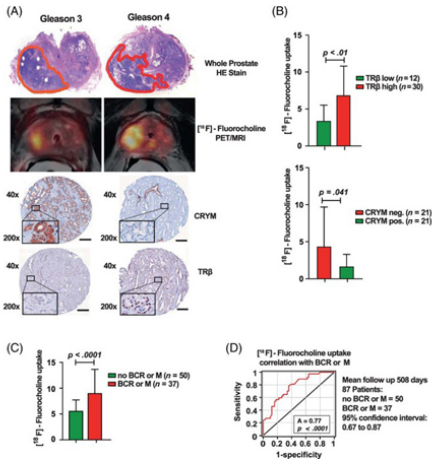
Expiration: Expiration date is one (1) year from date of receipt.

Images

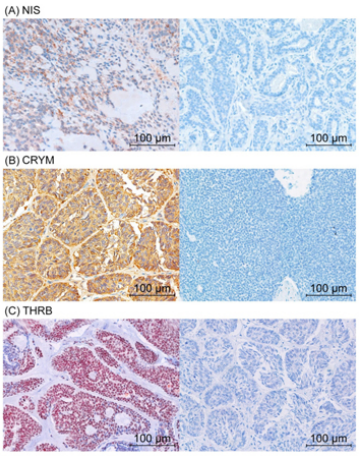


Western Blot
CRYM overexpression leads to a reduction of free T3. A, Immunoblot analysis of CRYM in PCa cell lines RWPE-1, LNCaP, PC3, DU145, LAPC4, VCAP. β-Actin was used as loading control. B, CRYM and TRβ levels in PC3 and DU145 cells that were transiently transfected with Empty Vector or CRYM(+). Fig 2. PMID: 33034050

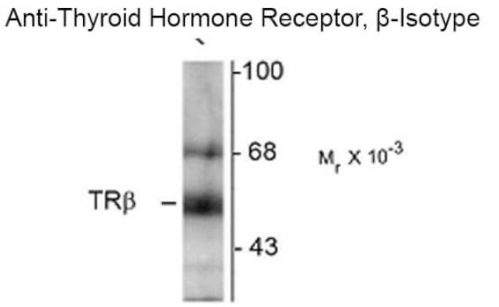
Western Blot
(C) Immunoblot analysis of AR, KLK3 and TRβ in PCa cell lines RWPE-1, LNCaP, LAPC4, VCAP, 22Rv1, PC3 and DU145. β-Actin was used as loading control. Figure S1.
PMID: 33034050



Immunohistochemistry
Noninvasive imaging using [18F]fluoromethylcholine (FMC) and PET is a surrogate marker for the activity of thyroid hormone metabolism in PCa. A, Hematoxylin Eosin (HE) whole mount sections of two different prostate cancer specimens on the left with a Gleason 3 lesion and on the right with a larger Gleason 4 lesion. Corresponding FMC PET/MRI of the same patient shows FMC uptake on the left (Gleason 3) and on the right (Gleason 4). IHC showing CRYM stainings positive in the Gleason 3 lesion on the left and TRβ stainings positive in the Gleason 4 lesion on the right (scale bar = 150 µm). B, Statistical evaluation of 42 PCa patients who underwent FMC PET/MRI prior to radical prostatectomy. CRYM and TRβ protein levels in tumors were analyzed using IHC. Choline uptake in tumor specimens with high TRβ expression (TRβ 2-6 score; n = 30, P < .01) or no CRYM expression (n = 21, P = .041). C, Choline uptake correlated to BCR or metastases in receiver-operating-characteristics-curve analysis (AUC = 0.77, P < .0001). D, 87 Patients with FMC PET/MRI and a mean follow-up time of 508 days were divided into a group that developed BCR and/or metastasis (n = 37) and a group that did not (n = 50). The first group had significantly higher choline levels in FMC PET/MRI (P < .0001). AUC, area under the curve; BCR, biochemical recurrence; FMC, [18F]fluoromethylcholine; HE, hematoxylin eosin; IHC, immunohistochemistry; MRI, magnetic resonance imaging; PCa, prostate cancer; PET, positron emission tomography [Color figure can be viewed at wileyonlinelibrary.com]. Fig 6.
PMID: 33034050



Immunohistochemistry
Immunohistochemical staining of NIS, CRYM, and THRB. Positive (left) and negative (right) immunohistochemical staining of NIS (A), CRYM (B), and THRB (C). Fig 1.
PMID: 34945824



Western blot of hippocampal lysate showing specific immunolabeling of the ~58k TR-β protein.

Western Blot

Western Blot of Mouse anti-Thyroid Hormone Receptor beta antibody. Lane 1: hippocampal lysate. Lane 2: none. Load: 10 µg per lane. Primary antibody: Thyroid Hormone Receptor beta antibody at 1:1,000 for overnight at 4°C. Secondary antibody: IRDye800™ mouse secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Predicted/Observed size: 58 kDa for Thyroid Hormone Receptor beta. Other band(s): Thyroid Hormone Receptor beta splice variants and isoforms.

References

- Aksoy O et al. Thyroid and androgen receptor signaling are antagonized by µ-Crystallin in prostate cancer. *Int J Cancer.* (2021)
- Schnoell J et al. Prognostic Relevance of Thyroid-Hormone-Associated Proteins in Adenoid Cystic Carcinoma of the Head and Neck. *J Pers Med.* (2021)

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