SANTA CRUZ BIOTECHNOLOGY, INC.

# TH (F-11): sc-25269

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The enzyme tyrosine hydroxylase (TH), also designated tyrosine 3-monooxygenase (TY3H), catalyzes the conversion of tyrosine to L-DOPA, which is the rate limiting step in the biosynthesis of catecholamines such as dopamine, adrenalin and noradrenalin. TH is thought to play a role in the pathogenesis of Parkinson's disease, which is associated with reduced dopamine levels. Two transcription factor binding sites in the proximal region of the TH gene, the TPA-responsive element (TRE) and the c-AMP responsive element (CRE), have been implicated in the complex regulation of the TH gene. TH is also known to be upregulated by the glia maturation factor (GMF), a Cdc 10/SWI6 motif-containing protein called V-1, and a variety of additional compounds.

## CHROMOSOMAL LOCATION

Genetic locus: TH (human) mapping to 11p15.5; Th (mouse) mapping to 7 F5.

## SOURCE

TH (F-11) is a mouse monoclonal antibody raised against amino acids 1-196 (with a deletion at 31-61) of tyrosine hydroxylase of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TH (F-11) is available conjugated to agarose (sc-25269 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25269 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25269 PE), fluorescein (sc-25269 FITC), Alexa Fluor® 488 (sc-25269 AF488), Alexa Fluor® 546 (sc-25269 AF546), Alexa Fluor® 594 (sc-25269 AF594) or Alexa Fluor® 647 (sc-25269 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25269 AF680) or Alexa Fluor® 790 (sc-25269 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.



## APPLICATIONS

TH (F-11) is recommended for detection of TH of mouse, rat and human origin by Western Blotting (starting dilution 1:1,000, dilution range 1:1,000-1:5,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TH siRNA (h): sc-36662, TH siRNA (m): sc-36661, TH siRNA (r): sc-270461, TH shRNA Plasmid (h): sc-36662-SH, TH shRNA Plasmid (m): sc-36661-SH, TH shRNA Plasmid (r): sc-270461-SH, TH shRNA (h) Lentiviral Particles: sc-36662-V, TH shRNA (m) Lentiviral Particles: sc-36661-V and TH shRNA (r) Lentiviral Particles: sc-270461-V.

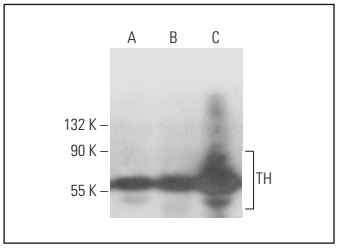
Molecular Weight of TH: 60 kDa.

Positive Controls: human adrenal gland extract: sc-363761, mouse brain extract: sc-2253 or human kidney extract: sc-363764.

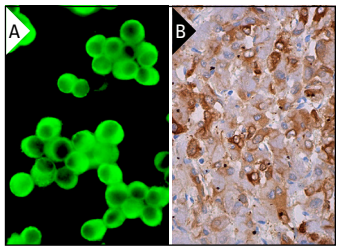
## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA




TH (F-11): sc-25269. Western blot analysis of TH expression in human adrenal gland (**A**), human kidney (**B**) and mouse brain (**C**) tissue extracts.




TH (F-11): sc-25269. Immunofluorescence staining of methanol-fixed PC-12 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (**B**).

## SELECT PRODUCT CITATIONS

1. Shin, N., et al. 2008. LRRK2 regulates synaptic vesicle endocytosis. Exp. Cell Res. 314: 2055-2065.
2. Repici, A., et al. 2024. Novel findings on CCR1 receptor in CNS disorders: a pathogenic marker useful in controlling neuroimmune and neuroinflammatory mechanisms in Parkinson's disease. Int. J. Mol. Sci. 25: 4337.
3. Li, T., et al. 2024. Identifying the NEAT1/miR-26b-5p/S100A2 axis as a regulator in Parkinson's disease based on the ferroptosis-related genes. PLoS ONE 19: e0316179.
4. Cameron, B., et al. 2024. Titin is a nucleolar protein in neurons. Res. Sq. rs.3.rs-4000799.
5. Fang, X., et al. 2024. Gut microbiota dysbiosis contributes to α-synuclein-related pathology associated with C/EBPβ/AEP signaling activation in a mouse model of Parkinson's disease. Neural Regen. Res. 19: 2081-2088.
6. Pinjala, P., et al. 2024. Dimethyl fumarate exerts a neuroprotective effect by enhancing mitophagy via the NRF2/BNIP3/PINK1 axis in the $MPP^+$ iodide-induced Parkinson's disease mice model. J. Alzheimers Dis. Rep. 8: 329-344.
7. Zhu, K., et al. 2024. Taltirelin induces TH expression by regulating TRHR and RARα in medium spiny neurons. J. Transl. Med. 22: 1158.
8. Kim, H.J., et al. 2024. PM2.5 exposure triggers hypothalamic oxidative and ER stress leading to depressive-like behaviors in rats. Int. J. Mol. Sci. 25: 13527.
9. Wang, D., et al. 2025. Identification of downregulated MECR gene in Parkinson's disease through integrated transcriptomic analysis and validation. Int. J. Mol. Sci. 26: 550.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.