SANTA CRUZ BIOTECHNOLOGY, INC.

# Pitx1 (G-4): sc-271435

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Pitx1 and Pitx2 are highly homologous, bicoid-related transcription factors. Pitx1 is a bicoid-related homeodomain factor that exhibits preferential expression in the hindlimb, as well as expression in the developing anterior pituitary gland and first branchial arch. Deletion of the Pitx1 locus results in decreased distal expression of the hindlimb-specific marker, the T-box factor (TBX4). Pitx1 may modulate morphogenesis, growth and patterning of a specific hindlimb region, and serves as a component of the variables that influence morphological and growth distinctions in forelimb and hindlimb identity. Pitx2 was initially identified as the gene responsible for human Rieger syndrome, an autosomal dominant condition that causes developmental abnormalities. Pitx2 is a transcription factor that regulates cardiac positioning and pituitary and tooth morphogenesis. Pitx2 also regulates lung symmetry by encoding "leftness" of the lung. Pitx2 is asymmetrically expressed in the left lateral-plate mesoderm, and mutant mice with laterality defects show altered patterns of Pitx2 expression that correlate with changes in the visceral symmetry. The genes which encode Pitx1 and Pitx2 map to human chromosomes 5q31.1 and 4q25, respectively.

## CHROMOSOMAL LOCATION

Genetic locus: PITX1 (human) mapping to 5q31.1; Pitx1 (mouse) mapping to 13 B1.

## SOURCE

Pitx1 (G-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-32 at the N-terminus of Pitx1 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271435 X, 200 µg/0.1 ml.

Pitx1 (G-4) is available conjugated to agarose (sc-271435 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271435 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271435 PE), fluorescein (sc-271435 FITC), Alexa Fluor® 488 (sc-271435 AF488), Alexa Fluor® 546 (sc-271435 AF546), Alexa Fluor® 594 (sc-271435 AF594) or Alexa Fluor® 647 (sc-271435 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271435 AF680) or Alexa Fluor® 790 (sc-271435 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271435 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).



## STORAGE

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

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## APPLICATIONS

Pitx1 (G-4) is recommended for detection of Pitx1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Pitx1 (G-4) is also recommended for detection of Pitx1 in additional species, including canine, bovine and porcine.

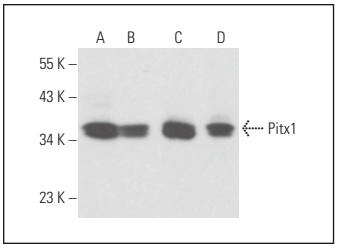
Suitable for use as control antibody for Pitx1 siRNA (h): sc-44015, Pitx1 siRNA (m): sc-152280, Pitx1 shRNA Plasmid (h): sc-44015-SH, Pitx1 shRNA Plasmid (m): sc-152280-SH, Pitx1 shRNA (h) Lentiviral Particles: sc-44015-V and Pitx1 shRNA (m) Lentiviral Particles: sc-152280-V.

Pitx1 (G-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

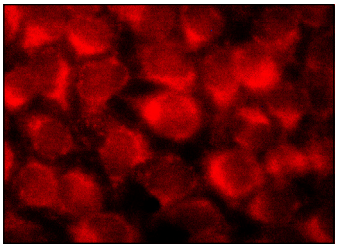
Molecular Weight of Pitx1: 39 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or Neuro-2A whole cell lysate: sc-364185.

## DATA




Pitx1 (G-4): sc-271435. Western blot analysis of Pitx1 expression in HeLa (**A**), Jurkat (**B**), HL-60 (**C**) and Neuro-2A (**D**) whole cell lysates.



Pitx1 (G-4): sc-271435. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Zhao, X., et al. 2019. Overexpression of Pitx1 attenuates the senescence of chondrocytes from osteoarthritis degeneration cartilage-A self-controlled model for studying the etiology and treatment of osteoarthritis. Bone 131: 115177.
2. Richard, D., et al. 2020. Evolutionary selection and constraint on human knee chondrocyte regulation impacts osteoarthritis risk. Cell 181: 362-381.e28.
3. Chakraborty, C., et al. 2023. Rewiring of the promoter-enhancer interactome and regulatory landscape in glioblastoma orchestrates gene expression underlying neurogliomal synaptic communication. Nat. Commun. 14: 6446.

## RESEARCH USE

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