SANTA CRUZ BIOTECHNOLOGY, INC.

# QPCT (4E11): sc-517122

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

QPCT (glutaminyl-peptide cyclotransferase) is a 361 amino acid protein that belongs to the glutaminyl-peptide cyclotransferase family. QPCT is responsible for the presence of pyroglutamyl residues in many neuroendocrine peptides. QPCT binds one zinc ion per subunit and has a bias against acidic and tryptophan residues adjacent to the N-terminal glutaminyl residue. The human QPCT gene shares 86% overall sequence identity with its bovine homolog. QPCT contains an N-terminal signal peptide region, several glycosylation and phosphorylation sites and two cysteine residues conserved between the bovine and human enzymes. Existing as two alternatively spliced isoforms, the QPCT gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, fruit fly, mosquito, *M. grisea* and *N. crassa,* and maps to human chromosome 2p22.2.

## REFERENCES


1. Busby, W.H., et al. 1987. An enzyme(s) that converts glutaminyl-peptides into pyroglutamyl-peptides. Presence in pituitary, brain, adrenal medulla, and lymphocytes. J. Biol. Chem. 262: 8532-8536.
2. Song, I., et al. 1994. Molecular cloning, sequence analysis and expression of human pituitary glutaminyl cyclase. J. Mol. Endocrinol. 13: 77-86.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607065. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Schilling, S., et al. 2004. Glutaminyl cyclases unfold glutamyl cyclase activity under mild acid conditions. FEBS Lett. 563: 191-196.
5. Ezura, Y., et al. 2004. Association of multiple nucleotide variations in the pituitary glutaminyl cyclase gene (QPCT) with low radial BMD in adult women. J. Bone Miner. Res. 19: 1296-1301.
6. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731.
7. Huang, Q.Y. and Kung, A.W. 2007. The association of common polymorphisms in the QPCT gene with bone mineral density in the Chinese population. J. Hum. Genet. 52: 757-762.
8. Cynis, H., et al. 2008. Isolation of an isoenzyme of human glutaminyl cyclase: retention in the Golgi complex suggests involvement in the protein maturation machinery. J. Mol. Biol. 379: 966-980.
9. Schilling, S., et al. 2008. Glutaminyl cyclase inhibition attenuates pyroglutamate Aβ and Alzheimer's disease-like pathology. Nat. Med. 14: 1106-1111.


## CHROMOSOMAL LOCATION

Genetic locus: QPCT (human) mapping to 2p22.2.

## SOURCE

QPCT (4E11) is a mouse monoclonal antibody raised against amino acids 262-359 representing partial length QPCT of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

QPCT (4E11) is recommended for detection of QPCT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

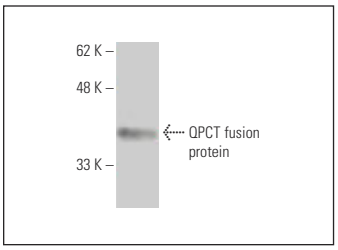
Suitable for use as control antibody for QPCT siRNA (h): sc-94268, QPCT shRNA Plasmid (h): sc-94268-SH and QPCT shRNA (h) Lentiviral Particles: sc-94268-V.

Molecular Weight of QPCT isoforms: 41/35 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA




QPCT (4E11): sc-517122. Western blot analysis of human recombinant QPCT fusion protein.

## SELECT PRODUCT CITATIONS


1. Zhao, T., et al. 2021. QPCT regulation by CTCF leads to sunitinib resistance in renal cell carcinoma by promoting angiogenesis. Int. J. Oncol. 59: 48.


## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

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