SANTA CRUZ BIOTECHNOLOGY, INC.

CPB siRNA (m): sc-142541

BACKGROUND

CPB (carboxypeptidase B), also known as CPB1, PASP (pancreas-specific protein) or PCPB, is a zinc-containing exopeptidase belonging to the A/B subfamily (or peptidase subfamily M14 A) of carboxypeptidases. CPB functions as a digestive carboxypeptidase and cleaves C-terminal basic amino acid residues from substrates. CPB is synthesized as an inactive zymogen in the endoplasmic reticulum of pancreatic acinar cells. It is then packaged into secretory granules and secreted into the lumen upon acinar cell stimulation. In the duodenum, CPB is activated by the cleavage of its N-terminal activation peptide (also known as CAPAP). CPB is widely recognized as a useful serum marker for acute pancreatitis and pancreatic graft rejection.

REFERENCES

1. Yamamoto, K.K., et al. 1992. Isolation of a cDNA encoding a human serum marker for acute pancreatitis. Identification of pancreas-specific protein as pancreatic procarboxypeptidase B. J. Biol. Chem. 267: 2575-2581.
2. Fernstad, R., et al. 1993. Isoforms of procarboxypeptidase B, (pancreas-specific protein, PASP) in human serum, pancreatic tissue and juice. Scand. J. Clin. Lab. Invest. Suppl. 213: 9-17.
3. Pezzilli, R., et al. 1994. Human pancreas-specific protein/procarboxypeptidase B: a useful serum marker of acute pancreatitis. Digestion 55: 73-77.
4. Rau, B., et al. 1998. The clinical value of human pancreas-specific protein procarboxypeptidase B as an indicator of necrosis in acute pancreatitis: comparison to CRP and LDH. Pancreas 17: 134-139.
5. Aloy, P., et al. 1998. Comparative analysis of the sequences and three-dimensional models of human procarboxypeptidases A1, A2 and B. Biol. Chem. 379: 149-155.
6. Krondahl, E., et al. 2000. Investigations of the *in-vitro* metabolism of three opioid tetrapeptides by pancreatic and intestinal enzymes. J. Pharm. Pharmacol. 52: 785-795.
7. Barbosa Pereira, P.J., et al. 2002. Human procarboxypeptidase B: three-dimensional structure and implications for thrombin-activatable fibrinolysis inhibitor (TAFI). J. Mol. Biol. 321: 537-547.

CHROMOSOMAL LOCATION

Genetic locus: Cpb1 (mouse) mapping to 3 A2.

PRODUCT

CPB siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CPB shRNA Plasmid (m): sc-142541-SH and CPB shRNA (m) Lentiviral Particles: sc-142541-V as alternate gene silencing products.

For independent verification of CPB (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-142541A, sc-142541B and sc-142541C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CPB siRNA (m) is recommended for the inhibition of CPB expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CPB (D-3): sc-271869 is recommended as a control antibody for monitoring of CPB gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CPB gene expression knockdown using RT-PCR Primer: CPB (m)-PR: sc-142541-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.