Recombinant Canine CALCA Protein, N-His-tagged

Cat. No. CALCA-13C **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Canine CALCA Protein, fused to His-tag at N-terminus, was expressed in E. coli.
Species	Canine
Source	E.coli
ProteinLength	115 AAAla26-Arg130
Description	Procalcitonin (PCT) the precursor of the hormone calcitonin is a 116 amino acid protein with a molecular mass of 13 kDa. It undergoes successive cleavages in the neuroendocrine cells of the thyroid to form three distinct molecules: calcitonin (32 amino acids); katacalcin (21 amino acids) and N-terminal fragment called aminoprocalcitonin (57 amino acids). Procalcitonin belongs to a group of related proteins including calcitonin gene-related peptides I and II, amylin, adrenomodulin and calcitonin (CAPA peptide family). Synthesis of procalcitonin is regulated gene CALC-1. Under normal metabolic conditions procalcitonin is present in the C-cells of the thyroid gland. The level of procalcitonin in the blood of healthy individuals is low. The risk of local bacterial infection occurs when the value of procalcitonin exceeds 0.25 ng/ml. The risk of systemic bacterial infection occurs when the value of procalcitonin exceeds 0.5 ng/ml. Bacterial lipopolysacharide (LPS) has been shown to be a potent inducer of procalcitonin release into systemic circulation. This release is not associated with an increase in calcitonin. Procalcitonin levels increase from 3 to 4 hours, peak at about 6 hours and then plateau for up to 24 hours. In contrast, C-

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	reactive protein (CRP) levels rise between 12 and 18 hours after bacterial challenge. In blood serum, procalcitonin has a half-life of between 25 and 30 hours. A study showed that hepatocytes produce large amounts of procalcitonin following stimulation with TNF-α and IL-6. In acute pancreatitis, procalcitonin closely correlates with the development of pancreatic infections. Since procalcitonin has been reported to be increased in different non-septic conditions such as major trauma, acute respiratory distress syndrome, rejection after transplantation, cardiogenic shock, severe burns and heat-stroke, the discriminative power of procalcitonin could be hampered in these particular patient categories. A recent study concluded that children with bacterial pneumonia had significantly higher procalcitonin levels than those with a viral aetiology, but there was a significant degree of overlap. Procalcitonin has the greatest sensitivity and specificity for differentiating patients with SIRS from those with sepsis, when compared to IL-2, IL-6, IL-8, CRP and TNF-α. Today procalcitonin is considered to be one of the earliest and most specific markers of sepsis. Areas of investigation: Sepsis, Bacterial infection, Septic shock, Inflammation.
Form	Filtered (0.4 μm) and lyophilized in 20mM TRIS, 50mM NaCl, pH 7.2.
Molecular Mass	12.7 kDa
AA Sequence	MKHHHHHHASAPFRSALEGLPDPTALSEKEGRLLLAALVKAYVQRKNELEQEQEQE TEGSSLDSSRAKRCSNLSTCVLGTYSKDLNNFHTFSGIGFGAETPGKKRDIASGLER GR
Endotoxin	< 1.0 EU/μg
Purity	> 90 % by SDS-PAGE
Applications	Western blotting, ELISA

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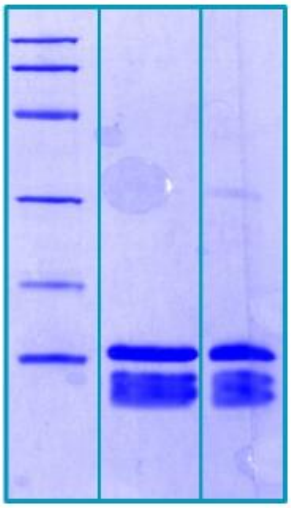
Quality Control Test	BCA to determine quantity of the protein. SDS PAGE to determine purity of the protein. LAL to determine quantity of endotoxin.
Notes	This product is intended for research use only.
Storage	Store the lyophilized protein at -80 centigrade. Lyophilized protein remains stable until the expiry date when stored at -80 centigrade. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80 centigrade for long term storage. Reconstituted protein can be stored at 4 centigrade for a week.
Reconstitution	Add 200 µof deionized water to prepare a working stock solution of approximately 0.5 mg/ml and let the lyophilized pellet dissolve completely.
Shipping	At ambient temperature. Upon receipt, store the product at the temperature recommended below.

GENE INFORMATION

Gene Name	CALCA calcitonin related polypeptide alpha [Canis lupus familiaris (dog)]
Official Symbol	CALCA
Synonyms	CALC; CCALCI; CGRP-I
Gene ID	403946
mRNA Refseq	NM_001313790.2
Protein Refseq	NP_001300719.1
UniProt ID	P41547

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SDS-PAGE



14 % SDS-PAGE separation of Canine Procalcitonin:

1. M.W. marker-14, 21, 31, 45, 66, 97 kDa

2. reduced and boiled sample, 2.5 μg/lane

3. non-reduced and non-boiled sample, 2.5μg/lane

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