BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno

Date of issue: 05.01.2018

PRODUCT DATASHEET

Procalcitonin Horse E. coli

Cat. No.: RD872582100
Type: Recombinant
Size: 0.1 mg
Source: E. coli
Species: Horse

Description

Total 122 AA. MW: 13.5 kDa (calculated). UniProtKB acc. no. Q9N0V5 (Ala26-Tyr140). C-terminal His-tag (6 extra AA). Protein identity confirmed by LC-MS/MS.

Other names

PCT

Introduction to the molecule

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-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.

Research topic

Immune Response, Infection and Inflammation, Sepsis

Amino Acid sequence

MAPFRSALES LPDPAVLPEE ESRLLLAALV KDYVQMKVRA LEQEQETGGA SLDSPRAKRC SNLSTCVLGT YTQDLNKFHT FPQTAIGVGA PGKKRVMARG LERDHGPHIG TSQDAYHHHH HH

Purity

Purity as determined by densitometric image analysis: > 90 %

Endotoxin

< 0.1 EU/µg

BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno, Czech Republic

Phone: +420-549-124-185, Fax: +420-549-211-460
E-mail: info@biovendor.com, sales@biovendor.com
Web: www.biovendor.com
There are BioVendor branches and distributors near you.
To find the office closest to you, visit www.biovendor.com/contact

Formulation:

Filtered (0.4 µm) and lyophilized from 0.5 mg/ml solution in 20 mM Tris buffer, 200 mM NaCl, 5%w/v trehalose pH 7.5.

Reconstituion:

Add deionized water to prepare a working stock solution of approximately 0.5 mg/ml and let the lyophilized pellet dissolve completely. During subsequent work keep protein in salted buffer, pure protein can precipitate below 150mM salt.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store lyophilized protein at –80°C. Lyophilized protein remains stable until the expiry date when stored at –80°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at –80°C for long term storage. Reconstituted protein can be stored at 4°C for a week.

Quality control

BCA to determine quantity of the protein.

SDS PAGE to determine purity of the protein.

LAL to determine quantity of endotoxin.

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

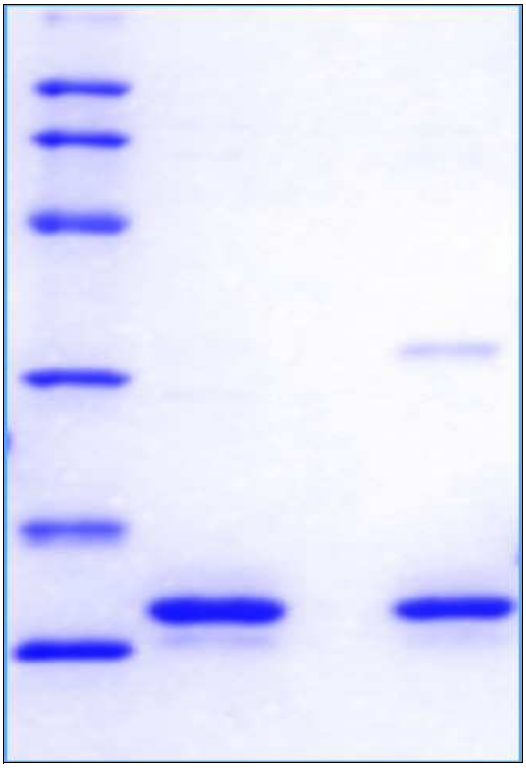
BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno, Czech Republic

Phone: +420-549-124-185, Fax: +420-549-211-460
E-mail: info@biovendor.com, sales@biovendor.com
Web: www.biovendor.com

There are BioVendor branches and distributors near you.
To find the office closest to you, visit www.biovendor.com/contact

BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno

Date of issue: 05.01.2018



14 % SDS-PAGE separation of Horse 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, 2.5 µg/lane

BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno, Czech Republic

Phone: +420-549-124-185, Fax: +420-549-211-460
E-mail: info@biovendor.com, sales@biovendor.com
Web: www.biovendor.com

There are BioVendor branches and distributors near you.
To find the office closest to you, visit www.biovendor.com/contact