ALPHA DIAGNOSTIC INTERNATIONAL

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Product Data Sheet

☐ **Cat #** RP-608-EN Recombinant (E.Coli, >95%, No tag) Human Procalcitonin (1-116 aa) **Size**: ☐ 10 ug

Procalcitonin (PCT) is a peptide precursor of the hormone calcitonin, the latter being involved with calcium homeostasis. It is composed of 116 amino acids and is produced by parafollicular cells (C cells) of the thyroid and by the neuroendocrine cells of the lung and the intestine. The level of procalcitonin in the blood stream of healthy individuals is below the limit of detection (10 pg/mL) of clinical assays. The level of procalcitonin rises in a response to a proinflammatory stimulus, especially of bacterial origin. In this case, it is produced mainly by the cells of the lung and the intestine. It does not rise significantly with viral or non-infectious inflammations. With the derangements that a severe infection with an associated systemic response brings, the blood levels of procalcitonin may rise to 100 µg/L. Remarkably the high procalcitonin levels produced during infections are not followed by a parallel increase in calcitonin or a decrease in serum calcium levels.

PCT is a peptide hormone mainly produced by the C cells of the thyroid and certain endocrine cells of the lung. Under normal expression conditions, procalcitonin is immediately cleaved into three specific fragments, an N terminal residue, calcitonin and katacalcin. Levels of unprocessed procalcitonin rise significantly after bacterial infection, trauma or shock.

Measurement of procalcitonin can be used as a marker of severe sepsis caused by bacteria and generally grades well with the degree of sepsis, although levels of procalcitonin in the blood are very low. PCT has the greatest sensitivity (85%) and specificity (91%) for differentiating patients with systemic inflammatory response syndrome (SIRS) from those with sepsis, when compared with IL-2, IL-6, IL-8, CRP and TNF-alpha. Evidence is emerging that procalcitonin levels can reduce unnecessary antibiotic prescribing to people with lower respiratory tract infections. Currently, procalcitonin assays are widely used in the clinical environment.

Source and Storage

PCT Human Recombinant produced in E.Coli is a single, polypeptide chain containing 116 amino acids fragment (1-116 aa, ~18 Kda). PCT was expressed as **NO Tag** and purified by standard chromatographic techniques (>95%). It is supplied in 20 mM Tris-HCl, pH 8.0, 150 mM NaCl in liquid (or see lot sp. conc on the vial) or in lyophilized in the same buffer. If supplied in powder then reconstitute it in water or a desired buffered to prepare stock solutions. Store powder at -20oC or liquid at 4oC for ~1 week or aliquots in suitable size and store at -20oC for long term storage.

References: Yealy DM (2009) JAMA 302, 1115-1116; Meisner M (1999) Crit. Care. 3, 4550; Jones AE (2007) Ann. Emerg. Med. 50, 34-41;

This item is for LABORATORY ESEARCH USE ONLY

Related Items

Catalog#	ProdDescription
RP-608	Recombinant (E.Coli, >95% his tag) Human Procalcitonin (3-116aa)
RP-608-EN	Recombinant (E.Coli, >95%, No tag) Human Procalcitonin (1-116 aa)
SP-88246-1	Calcitonin N-Terminal Flanking Peptide, human; N – Procalcitonin
PCT11-M	Mouse Monoclonal anti-human Procalcitonin (PCT) IgG#1 (capture), aff pure
PCT11-M	Mouse Monoclonal anti-human Procalcitonin (PCT) IgG#2 (detection), aff pure
0330-PTC	Human Procalcitonin (PCT) ELISA Kit, 96 tests, Quantitative

RP-608-EN 140606A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com

India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444

Email: customerservice@lifetechindia.com Website: www.lifetechindia.com