

#### DESCRIPTION

|                           |                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                      |
| <b>Specificity</b>        | Detects a synthetic peptide for Human Insulin C-peptide in Direct ELISA.                                                   |
| <b>Source</b>             | Recombinant Monoclonal Rabbit IgG Clone # 3347a                                                                            |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                 |
| <b>Immunogen</b>          | Synthetic peptide corresponding to human C-Peptide (proteolytic fragment derived from Insulin 57-87)<br>Accession # P01308 |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.                                                         |

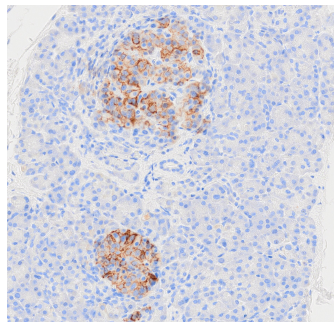
#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

|                             | <b>Recommended Concentration</b> | <b>Sample</b>                                                |
|-----------------------------|----------------------------------|--------------------------------------------------------------|
| <b>Immunohistochemistry</b> | 0.25-10 µg/mL                    | Immersion fixed paraffin-embedded sections of human pancreas |

#### DATA

##### Immunohistochemistry-Paraffin



**Detection of Insulin in Human Pancreas.** C-Peptide was detected in immersion fixed paraffin-embedded sections of human pancreas using Rabbit Anti-Human Insulin Monoclonal Antibody (Catalog # MAB11798) at 0.25 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm of pancreatic islets. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

#### PREPARATION AND STORAGE

|                                |                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reconstitution</b>          | Reconstitute lyophilized material at 0.2mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.                                                                                                                                                                                                                                              |
| <b>Shipping</b>                | Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.                                                                                                                                                                          |
| <b>Stability &amp; Storage</b> | <p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

**BACKGROUND**

C-peptide is a 31-amino-acid peptide that is cleaved from proinsulin during insulin biosynthesis, playing a crucial role as a byproduct of insulin processing. Though initially considered biologically inert, recent evidence highlights its significant physiological effects, including promoting microvascular blood flow and acting on cellular pathways linked to inflammation and oxidative stress. Unlike insulin, C-peptide is not rapidly metabolized by the liver, making its steady degradation in the kidneys a reliable marker for endogenous insulin production. This feature is particularly valuable in the clinical evaluation of beta-cell function and insulin secretion in both type 1 and type 2 diabetes. Additionally, altered levels of C-peptide have been associated with various disease states, including metabolic syndrome, cardiovascular complications, and diabetic nephropathy, suggesting potential roles as both a biomarker and therapeutic target. The physiological and pathophysiological significance of C-peptide continues to be an active area of research, underpinning its importance in metabolic and vascular health.

**References:**

1. Wahren J, Ekberg K, Johansson J, Henriksson M, Pramanik A, Johansson BL, Rigler R, Jörnvall H. Role of C-peptide in human physiology. *Am J Physiol Endocrinol Metab.* 2000 May;278(5):E759-68. doi: 10.1152/ajpendo.2000.278.5.E759. PMID: 10780930.
2. Chen J, Huang Y, Liu C, Chi J, Wang Y, Xu L. The role of C-peptide in diabetes and its complications: an updated review. *Front Endocrinol (Lausanne).* 2023 Sep 7;14:1256093. doi: 10.3389/fendo.2023.1256093. PMID: 37745697; PMCID: PMC10512826.
3. Yosten GL, Maric-Bilkan C, Luppi P, Wahren J. Physiological effects and therapeutic potential of proinsulin C-peptide. *Am J Physiol Endocrinol Metab.* 2014 Dec 1;307(11):E955-68. doi: 10.1152/ajpendo.00130.2014.