

DESCRIPTION

Source	<i>E. coli</i> -derived human Relaxin-2 protein Asp25-Ser53 (B chain) & Gln162-Cys185 (A chain) Accession # P04090
N-terminal Sequence Analysis	Asp25 (B chain) Gln162 (A chain): not observed, predicted
Structure / Form	Disulfide-linked heterodimer
Predicted Molecular Mass	2.7 kDa (A chain); 3.3 kDa (B chain)

SPECIFICATIONS

Activity	Measured by its ability to induce cAMP accumulation in THP-1 human acute monocytic leukemia cells. Parsell, D.A. <i>et al.</i> (1996) J. Biol. Chem. 271 :27936. The ED ₅₀ for this effect is 0.5-2.5 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Sodium Acetate. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Human Relaxin-2, also called H2 Relaxin, is a 6 kDa, 53 amino acid (aa) nonglycosylated, heterodimeric polypeptide that plays an important role in female reproduction (1, 2). Relaxin belongs to a structurally related insulin/relaxin superfamily that currently contains 10 members in human (2). To date, three human relaxin genes have been identified (1, 2). Among these, Relaxin-2 is best studied and the only known Relaxin to circulate in the blood (2, 3). As with other insulin/relaxin superfamily members, human Relaxin-2 is synthesized as a prehormone (4). It is 18 kDa in size and 185 aa in length. It contains a 24 aa signal sequence, a 3.3 kDa, 31 aa B domain, a 106 aa C (or connecting) domain, and a C-terminal, 2.7 kDa, 24 aa A domain (2, 4, 5). Upon removal of the signal peptide, two intrachain disulfide bonds are created between the B and A chains. This is followed by prohormone convertase removal of the intervening C-chain, creating a disulfide-linked heterodimer. Initially, the B chain is 31 aa in length and terminates with a Lys-Arg dipeptide. This is subsequently cleaved by a carboxypeptidase to generate a 29 aa mature chain (5). The mature human Relaxin-2 heterodimer is 48%, 44% and 43% aa identical to rat, canine and porcine Relaxin-2, respectively. Human Relaxin-2 is 35% and 75% aa identical to human Relaxin-3 and 1, respectively. An alternate splice form for human Relaxin-2 has been reported (6). It is identical to the standard form through the first 70 aa of the preproprecursor. At this point, a 47 aa substitution occurs that appears to be absent in typical cleavage motifs. Relaxin confers its activity by binding to leucine-rich guanine nucleotide-binding (G-protein) coupled receptors, LGR7 and LGR8 (2, 7). Relaxin is best known as a hormone of parturition that promotes growth and softening of the cervix, and development of the mammary gland (2, 3). It also has a marked impact on the uterus. In particular, it promotes angiogenesis, inhibits MMP production and activity, and down-regulates estrogen receptor-α expression (8).

References:

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