# Recombinant Human Relaxin-2 (B-33/A-24)

Catalog Number: 3596-RN/CF

## DESCRIPTION

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| **Source** | *E. coli*-derived<br>Val23-Arg55 (B chain), with an N-terminal Met & Gln162-Cys185 (A chain)<br>Accession # P04090 |
| **N-terminal Sequence Analysis** | Met (B chain), Gln162 (A chain) |
| **Structure / Form** | Disulfide-linked heterodimer |
| **Predicted Molecular Mass** | 2.7 kDa (A chain), 3.9 kDa (B chain) |

## SPECIFICATIONS

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| **Activity** | Measured by its ability to induce cAMP accumulation in THP−1 human acute monocytic leukemia cells. Parsell, D.A. *et al.* (1996) J. Biol. Chem. **271**:27936.<br>The $ED_{50}$ for this effect is typically 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 under reducing conditions and visualized by silver stain. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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| **Reconstitution** | Reconstitute at 100 µg/mL in sterile 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.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 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 preprohormone (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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