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ProductInformation

EGR-1
Human, Recombinant
Expressed in Sf9 insect cells

Product Number **E5777**
Storage Temperature –70 °C

Synonyms: NGFI-A; Krox24; TIS-8; Zif 268, ZENK

Product Description

EGR (Early Growth Response) proteins represent a family of transcription factors involved in cell cycle regulation.[1] They contain three, nearly identical DNA-binding zinc finger regions, each possessing a unique flanking region. EGR-1, -2, -3, and -4, bind the EGR-consensus sequence GCG T/GGG GCG, however the individual proteins show differing binding affinities for related sequences.[2] The EGR binding sites are present in promoters of several tissue specific genes regulating cytokines and growth factors as well as genes regulating the cell cycle.

EGR-1 has been shown to play a critical role in T cell activation. This protein is transiently expressed after mitogenic stimulation of T-cells and constituitively expressed after infection with HTLV-I or HTLV-II.[3] Other functions of EGR-1 include the down-regulation of GATA-1, up-regulation of the megakaryocyte-specific gene CD41a, and up-regulation of multiple divergent pathways in angiogenesis, wound healing, female reproduction, and tumorigenicity.

Human recombinant EGR-1 is expressed in *Sf* 9 insect cells infected with recombinant baculovirus containing a cDNA insert for human EGR-1. Human EGR-1 comprises 543 amino acids with a calculated molecular mass of 57.5 kDa (cDNA). It migrates as an approximately 80 kDa protein by SDS-PAGE.

Human recombinant EGR-1 is suitable for use in EMSA (electrophoretic mobility shift assay), *in-vitro* transcription assays, and nuclear extract analysis.

Reagents

Human recombinant EGR-1 is supplied as a frozen liquid containing at least 25 BFU (band-forming units) ERG-1 in 50 µL cell lysate supernatant containing 20 mM HEPES, pH 7.9, 420 mM NaCl, 1.5 mM $MgCl_2$, 0.2 mM EDTA, and 25% glycerol.

Preparation Instructions

Dilution of the stock solution is not necessary. The thawed solution is sufficient for performing 25 gel shift assays under standard conditions.

Precautions and Disclaimer

EGR-1 is for laboratory use only. Not for drug household or other uses.

Storage/Stability

Store in working aliquots at –70 °C. Repeated freeze-thaw cycles should be avoided. Do not store in a frost-free freezer.

Product Profile

Activity is >0.5 BFU/µL. EGR-1 activity is measured by its ability to induce band shift of an oligonucleotide containing the sequence GCG GGG GCG labeled with ^{33}P-γ-ATP. One BFU is sufficient to detect a band shift under standard conditions on native gel electrophoresis.

References

1. Decker, E. L., et al., The early growth response protein (EGR-1) regulates interleukin-2 transcription by synergistic interaction with the nuclear factor of activated T cells. J. Biol. Chem., **273**, 26923-26930 (1998)
2. Skerka, C., et al., A regulatory element in the human interleukin 2 gene promoter is a binding site for the zinc finger proteins Sp1 and EGR-1. J. Biol. Chem., **270**, 22500-22506 (1995)
3. Sakamoto, K. M., et al., HTLV-I and HTLV-II tax trans-activate the human EGR-1 promoter through different cis-acting sequences. Oncogene, **7**, 2125-2130 (1992)

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