Recombinant Human Placental Lactogen/CSH1

Catalog Number: 5757-PL/CF

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived Val27-Phe217 with a C-terminal 6-His tag Accession # P01243
N-terminal Sequence Analysis	Val27
Predicted Molecular Mass	23.1 kDa

SPECIFICATIONS

SDS-PAGE	24 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using Nb2-11 rat lymphoma cells. Gout, P.W. *et al.* (1980) Cancer Res. **40**:2433. The ED_{50} for this effect is 0.1-0.5 ng/mL
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. 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.** ● 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 Placental Lactogen (abbreviated PL or hPL), also called chorionic somatomammotropin hormone 1 (abbreviated CSH1), is a member of the prolactin/growth hormone (PRL/GH) family (1). It is found in a cluster of growth hormones on chromosome 17 that appear to have a common ancestry. Identical 191 amino acid (aa) mature hPL proteins may be formed from one of two genes (2). PL contains a pair of C-terminal cysteines that may form either intra- or interchain disulfides. Human PL shares 98% aa identity with chimpanzee PL and >85% aa sequence identity with other human growth hormones, but only ~25% aa identity with mouse, ovine or bovine PL. PL is mainly expressed by cells in the syncytiotrophoblast layer of the placenta, which produce increasing amounts of PL as pregnancy proceeds. The major portion enters the maternal circulation, where it joins GH2 (placenta-specific GH) in replacing the functions of pituitary GH during pregnancy. A smaller amount of PL circulates in the fetus. Primate PL shows high affinity for the PRL receptor and low affinity for the GH receptor (1). Reduced stimulation of PL by angiotensin 2 correlates with intrauterine growth restriction (3). There is some evidence that mature angiogenic PL may be cleaved to form an anti-angiogenic N-terminal fragment (4). Although PL promotes pancreatic beta cell survival, it does not appear to be altered in gestational diabetes. It helps prepare mammaries for lactation, but probably does not influence lactation itself. PL may be a ligand of stabilin-1, which has been proposed to regulate PL internalization and degradation or re-expression (6).

References:

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3. Szukiewicz, D. *et al.* (2008) Int. Immunopharmacol. **8**:177.
4. Struman, I. *et al.* (1999) Proc. Natl. Acad. Sci. USA **96**:1246.
5. Fujinaka, Y. *et al.* (2007) J. Biol. Chem. **282**:30707.
6. Kzhyshkowska, J. *et al.* (2008) J. Immunol. **180**:3028.

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