

## Recombinant Human PEDF

### Information

<b>Gene ID</b>	5176
<b>Accession #</b>	P36955
<b>Alternate Names</b>	SerpinF1, EPC-1, Cell proliferation-inducing gene 35 protein
<b>Source</b>	<i>Escherichia coli</i> .
<b>M.Wt</b>	Approximately 44.4 KDa, a single non-glycosylated polypeptide chain containing 399 amino acids.
<b>AA Sequence</b>	QNPASPPEEG SPDPDSTGAL VEEEDPFFKV PVNKLAAAVS NFGYDLYRVR SSTSPTTNVL LSPLSVATAL SALS LGAEQR TESIHRALY YDLISSPDIIH GTYKELLDTV TAPQKNLKSA SRIVFEKKLR IKSSFVAPLE KSYGTRPRVL TGNPRLDLQE INNWWQAQMK GKLARSTKEI PDEISILLG VAHFKGQWVT KFDSRKTSLE DFYLDEERTV RVPMMSDPKA VLRYGLDSDL SCKIAQLPLT GSMSIIFFLP LKVTQNLTLI EESLTSEFIH DIDRELKTVQ AVLTVPKLKL SYEGEVTKSL QEMKLQSLFD SPDFSKITGK PIKLTQVEHR AGFEWNEDGA GTPSPGLQP AHLTFPLDYH LNQPFI FVLR DTD TGALLFI GKILDPRGP
<b>Appearance</b>	Sterile Filtered White Lyophilized (freeze-dried) powder.
<b>Stability &amp; Storage</b>	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.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered concentrated solution in 20 mM PB, pH 7.4, 150 mM NaCl.
<b>Reconstitution</b>	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.
<b>Biological Activity</b>	Fully biologically active when compared to standard. The ED <sub>50</sub> as determined by its ability to enhance the adhesion of human Saos2 cells to bovine Collagen I coated plate is less than 2 ng/ml, corresponding to a specific activity of > 5.0 × 10 <sup>5</sup> IU/mg.
<b>Shipping Condition</b>	Gel pack.
<b>Handling</b>	Centrifuge the vial prior to opening.
<b>Usage</b>	For Research Use Only! Not to be used in humans.

### Components and Storage

Components	5 µg	100 µg	500 µg
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## Quality Control

Purity	> 97 % by SDS-PAGE and HPLC analyses.
Endotoxin	Less than 1 EU/µg of rHuPEDF as determined by LAL method.

## Description

Pigment epithelium-derived factor (PEDF) is encoded by the SERPINF1 gene in humans and found in vertebrates. It is a secreted phosphoglycoprotein that belongs to the clade F subfamily, serpin superfamily of proteinase inhibitors. The PEDF is a noninhibitory serpin with neurotrophic, anti-angiogenic, and anti-tumorigenic properties. It is synthesized as a 418 a.a. about 50kDa precursor that contains a 19 a.a. signal sequence and a 399 a.a. mature region that shows a pyroglutamate at Gln20. Like other serpins, it contains three  $\beta$ -sheets, 810  $\alpha$ -helices, and a C-terminal RCL (reactive center loop). Unlike other serpins with Ser protease inhibiting activity, PEDF has functions of inducing extensive neuronal differentiation in retinoblastoma cells, inhibiting of angiogenesis. As it does not undergo the S (stressed) to R (relaxed) conformational transition characteristic of active serpins, it exhibits no serine protease inhibitory activity. PEDF is researched as a therapeutic candidate for treatment of such conditions as choroidal neovascularization, heart disease, and cancer.

## Reference

1. Bouck N. 2002. Trends Mol Med, 8: 330-4.
2. Sugita Y, Becerra SP, Chader GJ, et al. 1997. J Neurosci Res, 49: 710-8.
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4. Yamagishi S, Matsui T, Nakamura K, et al. 2007. Protein Pept Lett, 14: 615-7.
5. Volpert KN, Tombran-Tink J, Barnstable C, et al. 2009. J Ocul Biol Dis Infor, 2: 1-11.

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**www.apexbt.com**

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com