

PowerStem PEC1

Special medium without animal components (ADCF) for serum-free culture and proliferation of human Progenitor Endothelial Cells (PEC)

Product	Description	Catalogue-No.	Size
PowerStem PEC1 ready-to-use	Xeno-free medium for human Progenitor Endothelial Cells, Ready to use	ST04-777500	500 ml
PowerStem PEC1 kit	Xeno-free medium for human Progenitor Endothelial Cells, Kit with 8 Supplements	ST04-77750K	500 ml

General information:

Endothelial cells line blood vessels and the internal cavities of the heart. They display a flattened, polygonal form and adhere to each other by desmosomes and tight-junctions. With a total number of about 10^{12} cells, the endothelium is one of the biggest organs of the body and plays a key role in many physiological and pathological processes. A number of factors control proliferation and apoptosis of endothelial cells, thereby regulating maintenance, degeneration, or regeneration of blood vessels. New blood vessel formation occurs via angiogenesis or vasculogenesis, a process restricted to embryonic development. In 1997, postnatal vasculogenesis has been proposed as an important mechanism for angiogenesis via blood or bone marrow derived circulating progenitor endothelial cells (PEC) (Asahara et al, Science 1997). PEC have been extensively studied as potential cell therapy for the repair of damaged blood vessels. Animal studies clearly demonstrated that administration of PEC partially rescued cardiovascular dysfunction or myocardial injury with evidence for PEC contribution to new vessel growth. While controversy exists as to the identity of endothelial cell progenitors, recently a PEC population has been identified which shows expression of typical endothelial as well as progenitor markers (Ingram et al, Blood. 2004;104:2752-2760). Importantly, these cells have been tested for a high proliferative potential in clonogenic assays and characterized by formation of functional blood vessels *in vivo* (Yoder et al, Blood. 2007;109:1801-1809). With endothelial cell progenitors rapidly moving into the field of interest for vascular tissue engineering with potential therapeutic application, the presence of whole animal serum or animal-derived components in culture media is undesirable for a cell therapeutic approach.

Product description:

PowerStem PEC1 ready-to-use (ST04-777500) is a specially developed medium for serum- and xeno-free *in vitro* culture of human progenitor endothelial cells (hPEC) containing all components necessary for optimal colony formation, clonogenic growth, and rapid proliferation. It is designed for use in an incubator at 37° C with a 5% CO₂ atmosphere. Please avoid repeated warming of complete medium. Prepare only the amount needed in a separate sterile tube. For a T25 cell culture flask it is recommended to use 5 ml of PowerStem PEC1. For smaller or larger culture area, please adjust volume accordingly. When cells have been thawed, change the medium after 24 h to remove unattached cells; for maintenance and propagation, change the medium every two or three days; for cultures close to confluence or for maximum proliferative response, it is recommended to use more medium or more frequent changes. Store at 2-8° C in the dark. Expiry: 1 month.

PowerStem PEC1 kit (ST04-77750K) is provided with supplements (pre-screened and tested for progenitor cells) in separate sterile packing. This will enable the user to prepare a medium for special application. For example, VEGF, FGF-2, or other components may be omitted from the complete medium for specific experimental settings. Please note that such a formulation will not promote optimal cell growth. Therefore, this composition cannot be used for routine long-term culture of PEC. Please make sure that sterility is not compromised when adding individual components to prepare complete medium. The medium should be thoroughly but carefully mixed after addition of all components to assure a homogeneous solution. Store basal or complete medium at 2-8° C and supplements at -20° C. Expiry: 1 year

PowerStem PEC1 kit contains the following components in single packing:

- Vitamin C (Ascorbic Acid phosphate)
- R3-IGF-1 (human recombinant Insulin-like Growth Factor)
- EGF (human recombinant Epidermal Growth Factor)
- FGF-2 (basic Fibroblast Growth Factor)
- VEGF (Vascular Endothelial Growth Factor)
- GA (Gentamicin/Amphotericin)
- Hydrocortisone
- PEC1 Supplement

Basal medium (w/o supplements) and complete/ready-to-use medium should not be frozen!

WARNING: PowerStem PEC1 is not suited for stopping trypsin reaction. Please use trypsin inhibitor solution to neutralize trypsin. To avoid damage to cells, progenitor endothelial cells should be exposed only for a minimum period of time to trypsin.

Product intended use: FOR RESEARCH USE ONLY!

Not approved for human or animal diagnostic or therapeutic procedures.

PowerStem PEC1 is suitable for the culture of:

Human Umbilical Cord Blood Progenitor Endothelial Cells
Human Adult Peripheral Blood Progenitor Endothelial Cells
Human Bone Marrow-derived Progenitor Endothelial Cells

Product information:

PowerStem PEC1 is a special medium without animal components (ADCF) for serum-free culture and proliferation of human Progenitor Endothelial Cells (PEC). It is manufactured under the highest standards and quality is checked continuously and strictly. PowerStem PEC1 is made from selected raw materials of the highest quality. The medium contains salts, amino acids, trace elements, hormones, growth factors and enriched human proteins derived from human blood in an optimized formulation. Because of this human blood components precipitates may occur in rare cases despite the addition of heparin after prolonged storage. These precipitates consist in most cases of fibrin. Fibrin appears in medium as larger material (up to 1-2mm) that is visible to the naked eye. The precipitate is often mistaken for microbial contamination. The quality and suitability of the medium in cell culture is thereby in no way limited.

Technical support

For technical support, questions or remarks please contact your local PAN-Seratech partner or the technical department of PAN-Seratech via email (info@pan-seratech.com) or phone +49-8543-601630.

FOR RESEARCH USE ONLY! Not approved for human or animal diagnostic or therapeutic procedures.