

## TECHNICAL DATA SHEET

# PureStem<sup>®</sup> Progenitor ES-199

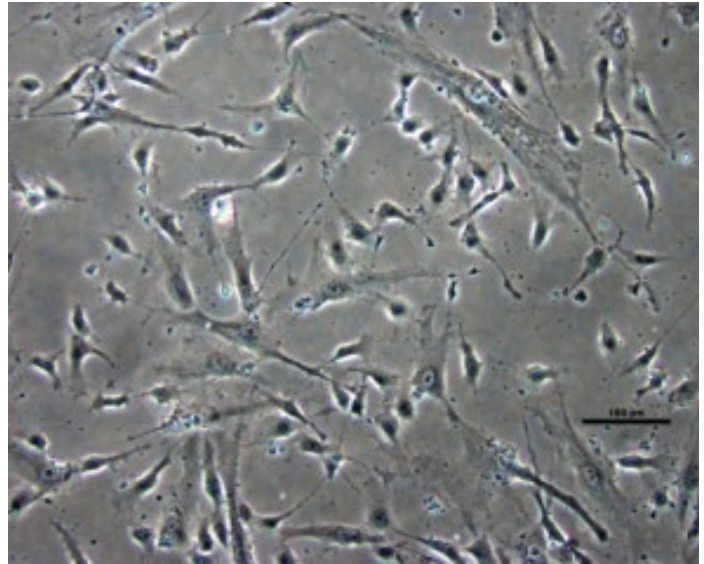
Catalog Number: ES-199

### OVERVIEW

PureStem Progenitor ES-199 expresses cystatin SN (CST1), killer cell lectin-like receptor subfamily C, member 2 (KLRC2), KLRC3, phosphodiesterase 5A, cGMP-specific (PDE5A), neuronal cell adhesion molecule (NRCAM), forkhead box G1 (FOXP1), and GATA binding protein 3 (GATA3). This progenitor does not express HOX genes.

Upon differentiation in micro-mass culture with TGFβ3, PureStem Progenitor ES-199 up-regulates MYH11 and tachykinin 3 (neuromedin K, neurokinin beta) (TAC3).

PureStem Progenitor ES-199 was derived from the registered parental hES cell line H9 (WA09) as described (West, M.D. et al, 2008).



### NOTES ON NOMENCLATURE

PureStem progenitors are named by embryologist and cell biologists based on fate mapping the progenitors' undifferentiated and differentiated gene expression using annotated genetic expression interpretations found on LifeMap Discovery™ and classic embryology terminology. The following standardized system is used by BioTime, Inc. and/or all of its subsidiaries:

#### Meso (Mesoderm):

**cor** (chordamesoderm: notochord); **prx** (paraxial or somatic mesoderm: head; somites; skeletal muscle; cartilage & IVD; dermis; tendons; endothelial cells); **int** (Intermediate: kidney; gonads); **latp** (Lateral Plate: circulatory system; body cavity; extra-embryonic tissues; Adipose; limb bones and cartilage)

#### Ecto (Ectoderm):

**surf** (surface ectoderm: epidermis; hair; nails; subacneous glands; olfactory epithelium; mouth (anterior pituitary, tooth enamel, cheek epithelium); lens, cornea)

#### NCr (Neural Crest):

**pns** (peripheral nervous system); **end** (endocrine and paraendocrine); **pig** (pigment Cells); **fac** (facial cartilage and bone); **con** (connective tissue and stroma: corneal endothelium and stroma; tooth papille; dermis, smooth muscle, adipose tissue of skin head and neck; connective tissue of salivary, lachrymal, thymus, thyroid, and pituitary glands; connective tissue of smooth muscle in arteries of aortic arch origin)

#### Endo (Endoderm):

**pnc** (pancreas); **prs** (prostate); **git** (GI tract); **lvr** (liver); **thy** (thyroid)

## PRODUCT INFORMATION

<b>Positive mRNA Markers:</b>	CST1, KLRC2, KLRC3, PDE5A, NRCAM, FOXG1, GATA3
<b>Contents:</b>	Vial contains >500,000 cells cryopreserved in 1 ml of FBS/10% DMSO
<b>Growth Medium:</b>	PureStem™ EPM k03      EM-1003
<b>Differentiation Conditions:</b>	Micro mass culture in the presence of TGFβ3 (call your BioTime Technical Service Representative for more information).
<b>Recommended Culture Conditions:</b>	Cells should be plated onto tissue culture grade polystyrene plastic coated with 0.1% gelatin. Following rapid thawing & slow dilution in final culture medium, the initial seeding density should be ~20,000 cells/cm <sup>2</sup> . Cells should be maintained at 37°C in a humidified incubator preferably with 10% CO <sub>2</sub> and 5% oxygen with media change at least twice a week. At confluence, split 1:3 for routine maintenance. Note: confluence for more than 2 days may lead to terminal differentiation.
<b>Population Doubling Time:</b>	Approximately 50 hours.
<b>Population Doubling:</b>	PureStem Progenitor ES-199, is sold at passage 12 (the original clonal isolate confluent in a 1.9 cm <sup>2</sup> well was P1), which corresponds to approximately 15 doublings since the first 1.9 cm <sup>2</sup> well and approximately 33 doublings since its original clonal plating. The line displays a finite lifespan in vitro, senescing at approximately 70 PD. When used properly this product is guaranteed to scale for a minimum of 10 population doublings.
<b>Sterility:</b>	The embryotic progenitor is negative for bacterial and fungal contamination.
<b>Thaw Test Result:</b>	>50% viability, >25% attachment, growth to confluence, and maintenance of original morphologic appearance.
<b>Certificates of Analysis:</b>	Available on request
<b>Restrictions:</b>	Cells are for research use only. They are not for human use, and may not be used for commercial purposes. User is responsible for proper handling upon receipt.
<b>Manufacturer:</b>	BioTime, Inc.

## PRODUCT WARRANTY

BioTime, Inc. and/or its subsidiaries warrants its products as set forth in the General Terms and Conditions of Sale found on ESI BIO's website at [www.esibio.com/termsandconditions](http://www.esibio.com/termsandconditions).

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