

TECHNICAL DATA SHEET

# PureStem<sup>®</sup> Progenitor ES-139

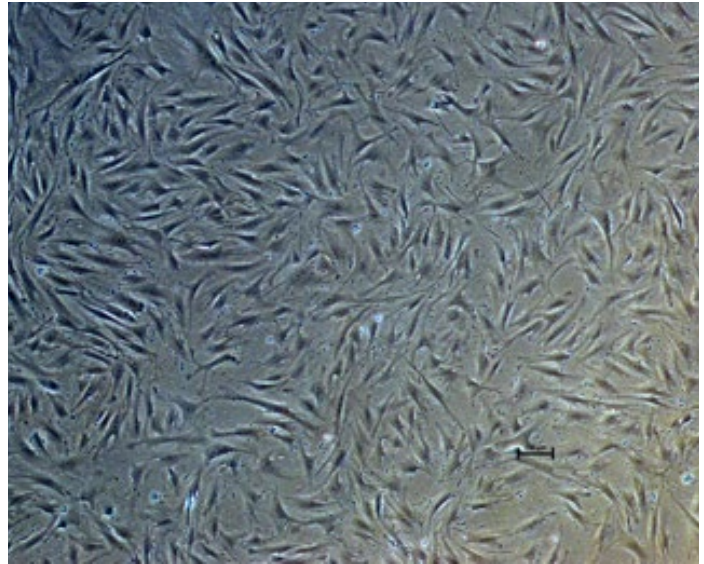
Catalog Number: ES-139

## OVERVIEW

PureStem Progenitor ES-139 expresses tumor necrosis factor (ligand) superfamily, member 18 (TNFSF18), heart and neural crest derivatives expressed 2 (HAND2), RNU2, GPR116, SPINK1, KRT86, GABRB1 (gamma-aminobutyric acid (GABA) A receptor, beta 1), and INS-IGF insulin- insulin-like growth factor 2. The most distal HOX gene expression is HOXA2, B2.

Upon differentiation in the presence of EGF, this progenitor up-regulates the smooth muscle markers ELN and MYH11.

PureStem Progenitor ES-139 was derived from the 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<sup>™</sup> 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; subacous 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

### Differentially expressed positive mRNA markers (by microarray):

TNFSF18, HAND2, RNU2, GPR116, SPINK1, KRT86, GABRB1, INS-IGF2

### Contents:

Vial contains >500,000 cells cryopreserved in 1 ml of FBS/10% DMSO

### Growth Medium:

PureStem™ EPM k03 EM-1003

### Differentiation Conditions:

Day 14 in high density culture; EGF 100ng/μL. Call your Technical Sales Representative for more information.

### Recommended Culture Conditions:

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.

### Population Doubling Time:

Approximately 50 hours.

### Population Doubling:

PureStem Progenitor ES-139, 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 13.5 doublings since the first 1.9 cm<sup>2</sup> well and approximately 31.5 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.

### Sterility:

The embryotic progenitor is negative bacterial and fungal contamination.

### Thaw Test Result:

>50% viability, >25% attachment, growth to confluence, and maintenance of original morphologic appearance.

### Certificates of Analysis:

Available on request

### Restrictions:

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.

### Manufacturer:

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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