

TECHNICAL DATA SHEET

PureStem[®] Progenitor ES-1001

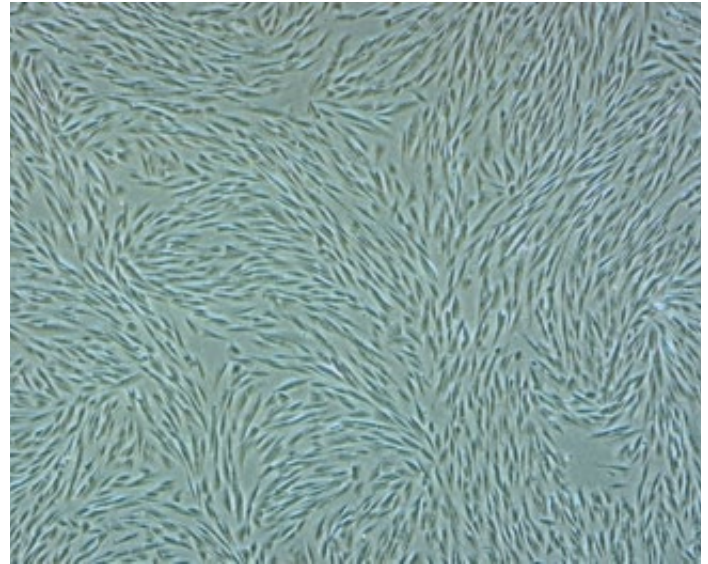
Catalog Number: ES-1001

OVERVIEW

PureStem Progenitor ES-1001 expresses the NKD2, HAND2, TBX3, FOXF1, and the HOX genes: HOXA10 and the relatively distal HOX genes HOXB7 and HOXC8 as well as the hindlimb marker PITX1 (expressed in hindlimb, but not forelimb bud mesen-chyme).

When these cells are cultured for 21 days in HyStem-C hydrogel with BMP4, the differentiated cells express GDF11, a gene encoding a protein reported to be useful in reversing age-related cardiac hypertrophy in mice (Loffredo et al, 2013).

Progenitor ES-1001 was derived from the NIH registered human embryonic stem cell line ESI-017 using a clonal isolation process similar to that previously described (West 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; 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 (microarray, undiff. cells):

NKD2, HAND2, TBX3, FOXF1, and HOXA10

Contents:

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

Growth Medium:

PureStem EPM k08

Part number EM-1008

Differentiation Medium:

HyStem-4D Differentiation Kit 2007
(For expression of GDF11)

Part number EM-2007

Recommended Culture Conditions:

Cells should be plated onto tissue culture grade polystyrene plastic coated with Matrigel®. Following rapid thawing & slow dilution in final culture medium, the initial seeding density should be ~ 20,000 cells/cm². Cells should be maintained at 37°C in a humidified incubator preferably with 10% CO₂ 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-1001 is sold at passage 11 (the original clonal isolate confluent in a 1.9 cm² well was P1), which corresponds to approximately 12 doublings since the first 1.9 cm² well and approximately 30 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 embryonic progenitor is negative for bacteria 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.

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