

TECHNICAL DATA SHEET

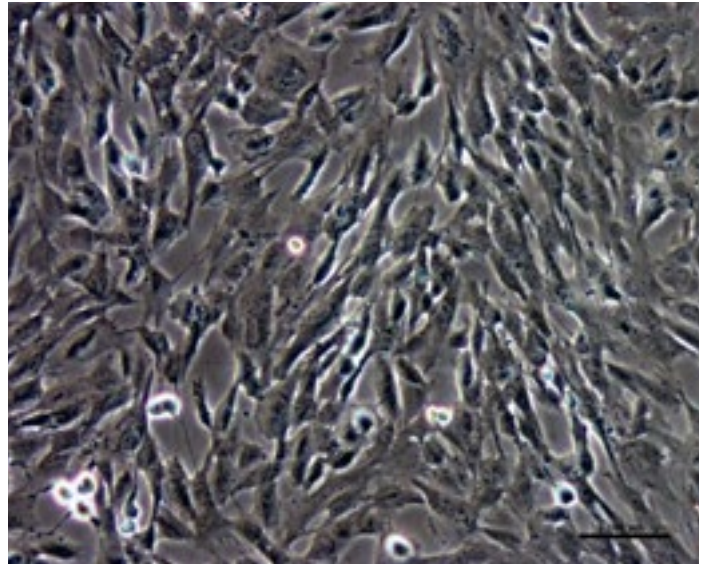
PureStem[®] ES-209, Meso-prx/latp Progenitor

Catalog Number: ES-209

OVERVIEW

PureStem ES-209, Meso-prx/latp expresses markers of intermediate mesoderm particularly resembling early renal progenitors, metanephric mesenchyme and S-shaped body markers (PAX2, PAX8, LHX1, HNF1B and JAG1). It also highly expresses the mesodermal marker GALR2 and markers of mural cells, smooth muscle cells (ACTA2, AEBP1, TAGN, CNN1) and Pericytes (KCNJ8, ACTA2, PDGFB, HBEGF).

This progenitor is clonally derived from the parental NIH registered Human ES cell line H9 (WA09) (West, M.D. et al, 2008). rived from the NIH registered human ES Cell International line ESI-017.



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; subaccesous 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):

TFAP2A, SPP1, SOX9, MSX2, MMP2, MMP10, LHX1, FOXF2, FOXD1, FGFR3, FGF13, EGFL6, CDH11, BMP5, BBOX1

Contents:

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

Growth Medium:

PureStem™ EPM k06

Part number EM-1006

Differentiation Media:

PureStem™ Chondrogenesis Kit

Part number EM-2001

HyStem-4D™ Chondrogenesis Kit (with HyStem hydrogel matrix)

Part number EM-2002

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/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 40 hours.

Population Doubling:

PureStem 7SMO032, NCr-fac & Meso Progenitor is sold at passage 10 (passage 1: original clonal isolate at confluence in 1.9 cm² well), which corresponds to approximately 12.5 doublings since the first passage and approximately 30 doublings since its original clonal plating. The progenitor displays a finite lifespan in vitro and when properly maintained and cultured using BioTime's growth or differentiation media, is guaranteed to express its differentiated function up to 15 population doublings after plating from a frozen ampoule.

Sterility:

The embryonic progenitor is negative for HIV (1, 2), HBV, HCV, bacteria, mycoplasma, and fungal contamination

Thaw Test Result:

>70% viability, >30% 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.

DISCLAIMER

BIOTIME, INC. AND/OR ALL ITS SUBSIDIARIES PRODUCTS MAY CONTAIN HUMAN OR OTHER ANIMAL SOURCE MATERIAL; TREAT AS POTENTIALLY INFECTIOUS. ALWAYS USE PROPER HANDLING TECHNIQUES. PRODUCTS SHOULD BE HANDLED AND USED ONLY BY PEOPLE TRAINED IN PROPER LABORATORY SAFETY PROCEDURES AT BIO-SAFETY LEVEL 2 OR HIGHER AS RECOMMENDED BY THE CDC FOR ANY HUMAN OR OTHER ANIMAL SOURCED MATERIAL.

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