

TECHNICAL DATA SHEET

PureStem[®] SM30, NCr-fac Progenitor

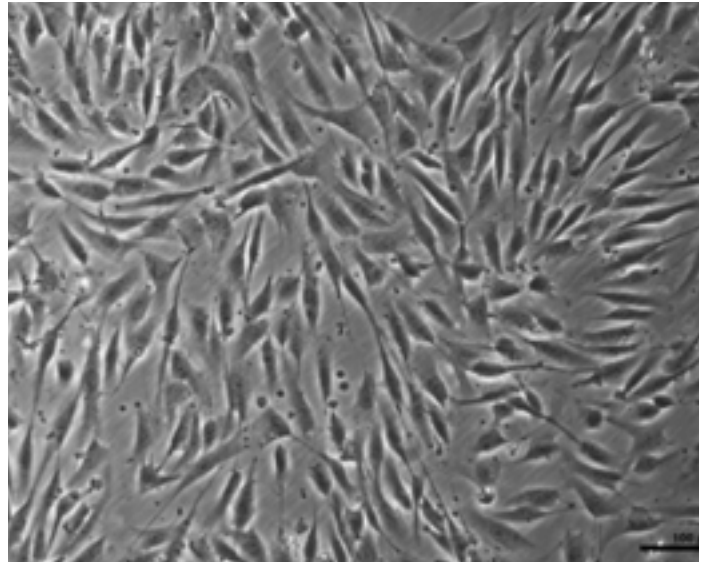
Catalog Number: ES-256

OVERVIEW

PureStem SM30, NCr-fac Progenitor expresses axial and appendicular level-derived mesenchymal cell markers including FGF18 and ITGB4 and no HOX gene expression.

This PureStem Progenitor is intensely chondrogenic when differentiated *in vitro* using PureStem's chondrogenic differentiation kits, expressing high levels of cartilage markers including COL2A1, LECT1, MATN4, EPYC COL9A1 and chondroadherin (CHAD). It also expresses osteogenic fate when differentiated using the PureStem osteogenic differentiation kit.

PureStem SM30, NCr-fac & Meso-latp Progenitor has been clonally derived from the parental NIH registered Human ES cell line H9 (WA09) (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; 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):

FOXF1, SPAG16, MTUS1, NTRK1, ZIC2, TFAP2C, SOX9, RUNX2, PODXL, PITX1, NKX3-2, GPR37

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)

Part number EM-2002

PureStem™ Osteogenesis Kit 01

Part number EM-2003

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. Confluence for over 2 days may lead to terminal differentiation.

Population Doubling Time:

Approximately 50 hours.

Population Doubling:

PureStem SM30, NCr-fac Progenitor is sold at passage 11 (passage 1: original clonal isolate at confluence in 1.9 cm² well), which corresponds to approximately 13.5 doublings since the first passage and approximately 31.5 doublings since its original clonal plating. This embryonic progenitor displays a finite lifespan in vitro, and when properly maintained may reach > 50 population doublings. However, BioTime tests and guarantees differentiated function will be achieved when using BioTime's reagents and protocols within 15 population doublings following plating from frozen ampoules.

Sterility:

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

DISCLAIMER

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