



PureStem™

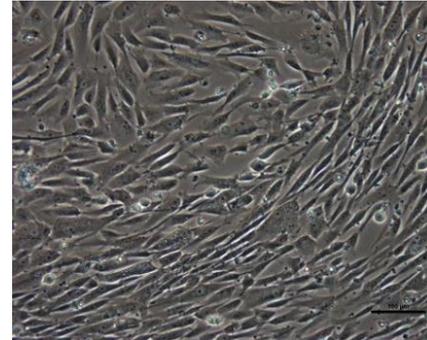
PureStem™ 7SMOO32, NCr-fac & Meso Progenitor

CAT #ES- 278

PureStem™ 7SMOO32, NCr-fac & Meso Progenitor expresses markers specific to axial and appendicular derived mesenchymal cells (*MMP10*, *MSX2*, *FOXF2*, *FOXD1*, *MMP2*, *CDH11*, *TFAP2A*), and the chondrogenic markers (*SOX9*, *COL1A1*, *FOXF2*).

The cell line exhibits chondrogenic differentiation *in vitro* when using PureStem Differentiation Kits.

Progenitor line 7SMOO32 was derived from the parental NIH registered Human ES cell line H9 (WA09) (West, M.D. et al, 2008).



FEATURES

- ✓ High propagation capacity
- ✓ Demonstrates low levels of *in vitro* Chondrogenic differentiation
- ✓ Clonally pure population
- ✓ Fate mapped by LifeMap Discovery

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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/cm ² . Cells should be maintained at 37°C in a humidified incubator preferably with 10% CO ₂ 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 7SMOO32, NCr-fac & Meso Progenitor is sold at passage 10 (passage 1: original clonal isolate at confluence in 1.9 cm ² 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 <i>in vitro</i> 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 embryotic 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.	

REFERENCES

West, M.D., Sargent, R.G., Long, J., Brown, C., Chu, J-S., Kessler, S., Derugin, N., Sampathkumar, J., Burrows, C., Vaziri, H., Williams, R., Chapman, K.B., Larocca, D., Loring, J.F., and Murai, J. 2008. The ACTCellerate Initiative: large-scale combinatorial cloning of novel human embryonic stem cell derivatives. *Reg. Med.* 3(3): 287-308.

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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:

Germ Layer-	Cell type or tissue/organ
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)	srf (surface ectoderm: epidermis; hair; nails; subacaceous 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)

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