

SMDS

Smooth Muscle Differentiation Supplement

Cat. no. S-008-5

5 ml

Product Description

Smooth Muscle Differentiation Supplement (SMDS) is a sterile, concentrated (100X) solution intended for use with basal Medium 231 for differentiation of normal human vascular smooth muscle cells. SMDS is an ionically-balanced supplement containing fetal bovine serum and heparin. Each 5 ml bottle of SMDS is the correct amount of differentiation supplement for a 500 ml bottle of basal Medium 231. When a 500 ml bottle of medium is supplemented with SMDS, the final concentrations of the components in the supplemented medium are: fetal bovine serum, 1% v/v; and heparin, 30 µg/ml.

Intended Use

SMDS is intended for use in conjunction with basal Medium 231 to induce differentiation of normal human vascular smooth muscle cells. Vascular smooth muscle cells cultured in Medium 231 supplemented with Smooth Muscle Growth Supplement (SMGS, cat. # S-007-25) will proliferate. Upon transferring these proliferating cultures into Medium 231 supplemented with SMDS, the cells will undergo a cessation of growth, a change in cellular morphology from slender stellate cells to enlarged rectangular or triangular shaped cells, and will express increased amounts of smooth muscle α -actin over the course of 2 to 8 days.

Reducing serum concentration and adding heparin to smooth muscle cell cultures are both commonly used procedures in differentiation studies of smooth muscle cells *in vitro*. For example see:

Newcomb, P.M. and Herman, I.M.; Pericyte growth and contractile phenotype: Modulation by endothelial-synthesized matrix and comparison with aortic smooth muscle. *J. Cell Physiol* 155: 385-393; 1993

Reilly, C.F., Fritze, L.M.S., Rosenburg, R.D.; Heparin inhibition of smooth muscle proliferation: a cellular site of action. *J. Cell Physiol* 129: 11-19; 1986

Castellot, J.J., Favreau, L.V., Karnovsky, M.J., Rosenberg, R.D.; Inhibition of vascular smooth muscle cell growth by endothelial cell-derived heparin. *J. Biol Chem* 257(19): 11256-11260; 1982.

This product is for research use only. Not for use in animals, humans, or diagnostic procedures.

Caution: If handled improperly, some components of this product may present a health hazard. Take appropriate precautions when handling this product, including the wearing of protective clothing and eyewear. Dispose of properly.

Storage and Stability

SMDS is stored at –20°C at our facility and is shipped on dry ice. Upon receipt, the product should be stored at –20°C in a freezer that is not self-defrosting. When stored at –20°C the product is stable until the expiration date shown on the label.

Thawing

To thaw, place the product in a 37°C water bath or overnight at 4°C. If thawed in a water bath, do not leave the product at 37°C after the product has thawed. For instructions on adding SMDS to basal Medium 231, please refer to the instructions that accompany the basal medium.

For research use only.

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