Dissociation Reagents

Collagenase Type III

For digestion of native collagen fibrils

Catalog #	07422	100 mg
	07423	1 g

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Product Description

Collagenase is a protease consisting of a single polypeptide chain approximately 1,000 amino acid residues in length. Collagenase is capable of digesting native collagen fibrils commonly found in connective tissues and therefore is frequently used for tissue dissociation. Collagenase preparations contain the activity of several proteases, including collagenase, caseinase, clostripain, and trypsin (Kessler & Yaron). Collagenase Type III contains low levels of proteolytic activity, especially for caseinase, clostripain, and trypsin. Collagenase Type III has been used for the dissociation of mammary glands (Rønnov-Jessen et al.), colon cancer stem cells (Prince et al.), and breast epithelial tumor cells (Chan et al.).

Product Information

Alternative Names:	Clostridium histolyticum collagenase; Collagenase 3; Collagenase Type 3; Collagenase III
Format:	Lyophilized powder
Storage:	Store at 2 - 8°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Reconstitution:	Dissociation reagents can be reconstituted in a balanced salt solution or buffer of choice.
Molecular Weight:	68 - 130 kDa
CAS Number:	9001-12-1
Optimum pH:	6.3 - 8.5
Cleavage Site:	-Pro-X- † -Gly-Pro-Y- : X = neutral Y = nonspecific

Specifications

Source:	Clostridium histolyticum
Activity:	Collagenase: ≥ 100 CDU/mg dry weight (mgdw); Caseinase: ≥ 50 u/mgdw; Clostripain: ≤ 3.0 u/mgdw; Trypsin: ≤ 0.3 u/mgdw. See Notes for further information.

Related Products

For a complete list of dissociation reagents, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com or contact us at techsupport@stemcell.com.

Notes

ACTIVITY UNITS
Collagenase: 1 collagenase digestion unit (CDU) equals 1 µmol of L-leucine equivalents released from collagen in 5 hours at 37°C, pH 7.5.
Caseinase: 1 unit equals 1 µmol of L-leucine equivalents released from 25 mg vitamin-free casein in 5 hours at 37°C, pH 7.5. Measures non-specific proteolytic activity.
Clostripain: 1 unit hydrolyzes 1 µmol of Nα-benzoyl-L-arginine ethyl ester (BAEE)/minute at 25°C at pH 7.6, after activation in 2.5 mM dithiothreitol (DTT).
Trypsin: 1 unit hydrolyzes 1 µmol of BAEE/minute at 25°C at pH 7.6.

References

Braren R et al. (2006) Endothelial FAK is essential for vascular network stability, cell survival, and lamellipodial formation. J Cell Biol 172(1): 151–62.
Chan RWS. (2004) Clonogenicity of Human Endometrial Epithelial and Stromal Cells. Biol Reprod 70(6): 1738–50.
Eagleson KL & Bennett MR. (1983) Survival of purified motor neurones in vitro: Effects of skeletal muscle-conditioned medium. Neurosci Lett 38(2): 187–92.
Guenthner CJ et al. (2014) Circadian rhythms of PER2::LUC in individual primary mouse hepatocytes and cultures. PLoS One 9(2).
Hardy CL et al. (2012) Inert 50-nm polystyrene nanoparticles that modify pulmonary dendritic cell function and inhibit allergic airway inflammation. J Immunol 188(3): 1431–41.
Kessler E & Yaron A. (1973) A novel aminopeptidase from clostridium histolyticum. Biochem Biophys Res Commun 50(2): 405–12.
Liu R et al. (2007) The prognostic role of a gene signature from tumorigenic breast-cancer cells. N Engl J Med 356(3): 217–26.
Mueller SO et al. (2002) Mammary gland development in adult mice requires epithelial and stromal estrogen receptor alpha. Endocrinology 143(6): 2357–65.
Prince ME et al. (2007) Identification of a subpopulation of cells with cancer stem cell properties in head and neck squamous cell carcinoma. Proc Natl Acad Sci USA 104(3): 973–8.
Rønnov-Jessen L et al. (2002) Differential expression of a chloride intracellular channel gene, CLIC4, in transforming growth factor-beta1-mediated conversion of fibroblasts to myofibroblasts. Am J Pathol 161(2): 471–80.
Stallmach A et al. (1998) Increased state of activation of CD4 positive T cells and elevated interferon gamma production in pouchitis. Gut 43(4): 499–505.