Dissociation Reagents

Collagenase Type II

For digestion of native collagen fibrils

Catalog #	07418	100 mg
	07419	1 g
	100-0678	5 g

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Product Description

Collagenase is a protease consisting of a single polypeptide chain approximately 1000 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 II contains high levels of protease activity, especially clostripain, and has been used for the dissociation of tissues such as lung (You & Brody; Comhair et al.), kidney (Valente et al.), liver (Linghor et al.), and thymus (Vandenabeele et al.), as well as dissociation of endothelial cells (Patel et al.) and mesenchymal stem cells (Steigman & Fauza).

Product Information

Alternative Names:	Clostridium histolyticum collagenase; Collagenase 2; Collagenase Type 2; Collagenase II
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

Please refer to the Safety Data Sheet (SDS) for hazard information.

Specifications

Source:	Clostridium histolyticum
Activity:	Collagenase: ≥ 125 CDU/mg dry weight (mgdw); Caseinase: ≥ 200 u/mgdw; Clostripain: ≥ 3.5 u/mgdw; Trypsin: ≥ 0.1 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, visit 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

Burger PE et al. (2009) High aldehyde dehydrogenase activity: A novel functional marker of murine prostate stem/progenitor cells. Stem Cells 27(9): 2220–8.
Chow KS et al. (2011) Isolation & characterization of Hoechst(low) CD45(negative) mouse lung mesenchymal stem cells. J Vis Exp (56): e3159.
Comhair SAA et al. (2012) Human primary lung endothelial cells in culture. Am J Respir Cell Mol Biol 46(6): 723–30.
Kessler E & Yaron A. (1973) A novel aminopeptidase from clostridium histolyticum. Biochem Biophys Res Commun 50(2): 405–12.
Koster JC et al. (2000) Targeted overactivity of beta cell K(ATP) channels induces profound neonatal diabetes. Cell 100(6): 645–54.
Lee B et al. (2014) Anoctamin 1 contributes to inflammatory and nerve-injury induced hypersensitivity. Mol Pain 10(1): 5.
Lingohr MK et al. (2002) Dichloroacetate stimulates glycogen accumulation in primary hepatocytes through an insulin-independent mechanism. Toxicol Sci 68(2): 508–15.
Patel V a et al. (2003) Isolation and characterization of human thyroid endothelial cells. Am J Physiol Endocrinol Metab 284(1): E168–76.
Satish L et al. (2015) Expression analysis of human adipose-derived stem cells during in vitro differentiation to an adipocyte lineage. BMC Med Genomics 8: 41.
Sharon Y et al. (2013) Isolation of normal and cancer-associated fibroblasts from fresh tissues by Fluorescence Activated Cell Sorting (FACS). J Vis Exp (71): e4425.
Steigman S & Fauza DO. (2007) Isolation of mesenchymal stem cells from amniotic fluid and placenta. Curr Protoc Stem Cell Biol (Suppl 1): Unit 1E.2.
Valente MJ et al. (2011) A rapid and simple procedure for the establishment of human normal and cancer renal primary cell cultures from surgical specimens. PLoS One 6(5): e19337.
Vandenabeele S et al. (2001) Human thymus contains 2 distinct dendritic cell populations. Blood 97(6): 1733–41.
Wirtz S et al. (2002) Treatment of T cell-dependent experimental colitis in SCID mice by local administration of an adenovirus expressing IL-18 antisense mRNA. J Immunol 168: 411–20.
You Y & Brody SL. (2013) Culture and differentiation of mouse tracheal epithelial cells. Methods Mol Biol 945: 123–43.