Dissociation Reagents

DisCoZyme 1, ACF

Collagenase/dispase blend with high collagenase and high caseinase activity

Catalog # 07449

50 mg

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Product Description

DisCoZyme 1, Animal Component-Free (ACF) is a blend of collagenase and dispase, both of which are obtained from cultures free of animal-derived materials. DisCoZyme 1, ACF contains a minimum of 250 collagenase units/mg and 1000 caseinase units/mg of dry weight. 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). Dispase is a neutral, amino-endoprotease that cleaves the N-terminal peptide bond of non-polar amino acid residues. Dispase has mild proteolytic activity, which makes it especially useful for the isolation and passaging of primary cells. Its proteolytic activity also allows it to maintain membrane integrity. DisCoZyme 1, ACF is designed to contain high levels of collagenase and caseinase activity and is intended for use in applications where prevention of the introduction of potential animal-derived pathogens is necessary. DisCoZyme 1, ACF has been used for the dissociation of lung (Fujino et al.; Driscoll et al.) and neural (Panchision et al.) tissues.

Product Information

Alternative Names:	Collagenase mix; Discozyme; Dispase mix; Collagenase/dispase mix; Neutral protease; Proteinase
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:	32 - 130 kDa
CAS Number:	9001-12-1, 42613-33-2
Optimum pH:	6.3 - 8.5
Cleavage Site:	-Pro-X- † -Gly-Pro-Y- : X = neutral Y = nonspecific

Specifications

Source:	Clostridium histolyticum/Bacillus polymyxa
Activity:	Collagenase: ≥ 250 CDU/mg dry weight (mgdw); Caseinase: ≥ 1000 u/mgdw; Clostripain: ≤ 5.0 u/mgdw; Trypsin: ≤ 0.5 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 one µmol of BAEE/minute at 25°C at pH 7.6.

References

Driscoll B et al. (2012) Isolation and characterization of distal lung progenitor cells. Methods Mol Biol 879: 109–22.
Fujino N et al. (2011) Isolation of alveolar epithelial type II progenitor cells from adult human lungs. Lab Invest 91(3): 363–78.
Kessler E & Yaron A. (1973) A novel aminopeptidase from clostridium histolyticum. Biochem Biophys Res Commun 50(2): 405–12.
Panchision DM et al. (2007) Optimized flow cytometric analysis of central nervous system tissue reveals novel functional relationships among cells expressing CD133, CD15, and CD24. Stem Cells 25(6): 1560–70.