Dissociation Reagents

DNase I, ACF

Animal component-free DNase I for digestion of DNA

Catalog #	07473	25 ku
	07474	100 ku

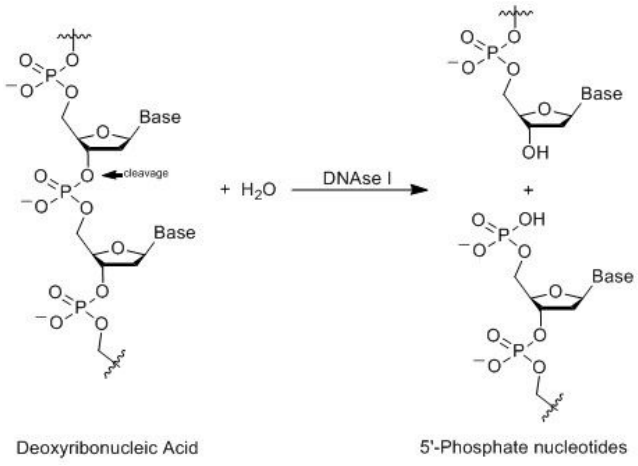
STEMCELL™ TECHNOLOGIES
Scientists Helping Scientists™ | WWW.STEMCELL.COM
TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

Deoxyribonuclease I (DNase I), Animal Component-Free (ACF) is obtained from cultures free of animal-derived materials. DNase I is an endonuclease consisting of a single glycosylated polypeptide chain with two disulfide bonds. DNase is often included in tissue dissociation protocols to digest DNA that has leaked into the dissociation medium as a result of cell damage. DNase I, ACF preferentially cleaves phosphodiester linkages adjacent to pyrimidine nucleotides in both single- and double-stranded DNA, yielding polynucleotides with 5'-phosphate and 3'-hydroxyl groups (Bernardi et al.). DNase I, ACF has been used for the dissociation of human tissues such as microglia (Klegeris & McGeer), cartilage (Dunham & Koch), colon (Fukushima & Fiocchi), epithelium (Fukushima & Fiocchi), liver (Vatakis et al.), lung (Fujino et al.), and neural (Fuja et al.), and for dissociation of stem cells (Kusuma et al.).

Product Information

Alternative Names:	DNA endonuclease; DNA nuclease; Deoxyribonucleic phosphatase; Pancreatic DNase; Thymonuclease
Format:	Lyophilized powder
Storage:	Store at 2 - 8°C.
Stability:	Stable until expiry date (EXP) on label.
Reconstitution:	Dissociation reagents can be reconstituted in a balanced salt solution or buffer of choice.
Molecular Weight:	29.1 kDa
CAS Number:	9003-98-9
Optimum pH:	7.8
Cleavage Site:	DNase I preferentially splits phosphodiester linkages adjacent to a pyrimidine nucleotide. This yields 5'-phosphate terminated polynucleotides with a free hydroxyl group at the 3' position.



Cleavage site of DNase I

Specifications

Source:	Pichia pastoris
Activity:	≥ 2000 Kunitz units (ku)/mg dry weight. 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
1 Kunitz unit (ku) causes an increase in absorbance of 0.001/minute/mL at 260 nm at 25°C, pH 5.0 when acting upon highly polymerized DNA.

References

Bernardi A et al. (1975) The specificity of five DNAases as studied by the analysis of 5'-terminal doublets. Eur J Biochem 52(3): 451–7.
Dunham BP & Koch RJ. (1998) Basic fibroblast growth factor and insulinlike growth factor I support the growth of human septal chondrocytes in a serum-free environment. Arch Otolaryngol Head Neck Surg 124(12): 1325–30.
Fuja TJ et al. (2004) Asymmetric localization of LGN but not AGS3, two homologs of Drosophila pins, in dividing human neural progenitor cells. J Neurosci Res 75(6): 782–93.
Fujino N et al. (2011) Isolation of alveolar epithelial type II progenitor cells from adult human lungs. Lab Invest 91(3): 363–78.
Fukushima K & Fiocchi C. (2004) Paradoxical decrease of mitochondrial DNA deletions in epithelial cells of active ulcerative colitis patients. Am J Physiol Gastrointest Liver Physiol 286(5): G804–13.
Klegeris A & Mcgeer PL. (2005) Chymotrypsin-like proteases contribute to human monocytic THP-1 cell as well as human microglial neurotoxicity. Glia 51(1): 56–64.
Kusuma GD et al. (2015) Ectopic bone formation by mesenchymal stem cells derived from human term placenta and the decidua. PLoS One 10(10).
Li C-S et al. (2016) Fibromodulin reprogrammed cells: A novel cell source for bone regeneration. Biomaterials 83: 194–206.
Li L & Schust DJ. (2015) Isolation, purification and in vitro differentiation of cytotrophoblast cells from human term placenta. Reprod Biol Endocrinol 13(1): 71.
Moro K et al. (2015) Isolation and analysis of group 2 innate lymphoid cells in mice. Nat Protoc 10(5): 792–806.
Patel J et al. (2013) Prospective surface marker-based isolation and expansion of fetal endothelial colony-forming cells from human term placenta. Stem Cells Transl Med 2(11): 839–47.
Su CTE et al. (2015) An optogenetic approach for assessing formation of neuronal connections in a co-culture system. J Vis Exp (96): 1–9.
Vatakis DN et al. (2012) Using the BLT humanized mouse as a stem cell based gene therapy tumor model. J Vis Exp (70): e4181.