

AR00158FC-N**Bovine Collagen Type I - FITC****Alternate names:**

Alpha-1 type I collagen, Alpha-2 type I collagen, COL1A1, COL1A2

Quantity:

10 mg

Concentration:

1.0 mg/ml

Background:

Collagens are highly conserved throughout evolution and are characterised by an uninterrupted "Glycine X Y" triplet repeat that is a necessary part of the triple helical structure. Type I collagen (95 kDa) is found in bone, cornea, skin and tendon. Mutations in the encoding gene are associated with osteogenesis imperfecta, Ehlers Danlos syndrome, and idiopathic osteoporosis. Reciprocal translocations between chromosomes 17 and 22, where this gene and the gene for Platelet-derived growth factor beta are located, are associated with a particular type of skin tumor called dermatofibrosarcoma protuberans, resulting from unregulated expression of the growth factor. FITC-labeled bovine type I Collagen Substrate is an excellent substrate for examining collagenase activity. This labelled substrate is highly purified and telopeptide free and is supplied lyophilized. To minimize background levels in collagenase assays, FITC-labeled collagen has been enzymatically pre-treated and further purified by ion-exchange chromatography.

Uniprot ID:[P02453](#)**NCBI:**[NP_001029211](#)**GenelD:**[282187](#)**Species:**

Bovine

Source:

Bovine Skin.

Format:

State: Liquid purified peptide, FITC-labeled
Purity: Enzymatically pre-treated and further purified by Ion-Exchange Chromatography.
Buffer System: 0.01M Acetic Acid.

Applications:

Used for the Assay of Mammalian Collagenase activity. FITC-labeled collagen can also be used as a substrate for cell culture. Collagen degradation products in the culture supernatants can be directly determined by measured the fluorescence at 520 nm (Emission)/490 nm (Excitation).
To heat denature collagen for preparing a substrate for Gelatinase, transfer Collagen solution to a brown glass bottle and heat to 80°C.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Description:

FITC-labeled Bovine type I is an excellent substrate for examining collagenase activity. This labelled substrate is highly purified and telopeptide free.

Storage:

Store the product (in aliquots) at -20°C.
Can be shipped at 2-8°C.
Avoid repeated freezing and thawing.
Shelf life: One year from despatch.

General Readings:

1. Terato K, Nagai Y, Kawanishi K, Yamamoto S. A rapid assay method of collagenase activity using ¹⁴C-labeled soluble collagen as substrate. *Biochim Biophys Acta*. 1976 Oct 11;445(3):753-62. PubMed PMID: 184829.
2. Sellers A, Cartwright E, Murphy G, Reynolds JJ. Evidence that latent collagenases are enzyme-inhibitor complexes. *Biochem J*. 1977 May 1;163(2):303-7. PubMed PMID: 194584.
3. Shinkai H, Kawamoto T, Hori H, Nagai Y. A complex of collagenase with low molecular weight inhibitors in the culture medium of embryonic chick skin explants. *J Biochem*. 1977 Jan;81(1):261-3. PubMed PMID: 191437.
4. Shinkai, H. & Nagai, Y., "A latent collagenase from embryonic human skin explants." *J. Biochem. (Tokyo)* 1977, 81, 1261-1263.
5. Murawaki Y, Koda M, Yamada S, Kawasaki H, Shima H, Burkhardt H. Serum collagenase activity in patients with chronic liver disease. *J Hepatol*. 1993 Jul;18(3):328-34. PubMed PMID: 8228126.