3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Collagen Solution
from calf skin

Product Number **C 8919**
Storage Temperature 2-8 °C

Product Description
CAS Number: 9007-34-5

This product is a 0.1% (1 mg/ml) solution of calf skin collagen in 0.1 M acetic acid. It is intended to produce (dried) thin layer coatings on tissue culture plates/flasks to facilitate attachment of anchorage-dependent cells. It is NOT intended to produce 3-D (thick) gels since this solution will not gel (presumably due to γ-irradiation of the powder during the production process).

This collagen solution has been tested in culture with mammalian cells to verify it is low in endotoxin content. This collagen is Bornstein and Traub Type I, not to be confused with Sigma's catalog type which is an organizational placeholder. Type I collagen is a component of skin, bone, tendon, and other fibrous connective tissues. It is often used in cell culture as an attachment substratum. Myoblasts, spinal ganglia, hepatocytes, embryonic lung, heart explants, fibroblasts, endothelial cells, and islet cells have been cultured successfully on films or gels of Type I collagen. Type I collagen differs from other collagens by their low lysine hydroxylation and low carbohydrate composition.

Collagen breaks down metabolically in the body to release N-telopeptide, which is the N-terminus of collagen. There is also C-telopeptide, which is presumably the C-terminus. N-telopeptide is released in urine, and its detection in diagnostic tests is used to screen for osteoporosis.

Although different types of collagen exist, they are all composed of molecules containing three polypeptide chains arranged in a triple helical conformation. Slight differences in the primary structure (amino acid sequence) establish differences between the types. The amino acid sequence of the primary structure is mostly a repeating motif with glycine in every third position and proline or 4-hydroxyproline frequently preceeding the glycine residue.[1,2]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Procedure
Optimal conditions for attachment must be determined for each cell line and application.

1. Collagen solution (1 mg/ml) should be diluted 10-fold with sterile water to obtain a working concentration of 0.01%.
2. Coat dishes with 6-10 µg/cm^2. Allow the protein to bind for several hours at room temperature, 37 °C, or overnight at 2-8 °C.
3. Remove excess fluid from the coated surface, and allow it to dry overnight. If the collagen solution is not sterile, the dried, coated surface can be sterilized easily by overnight exposure to UV light in a sterile tissue culture hood.
4. Rinse with sterile tissue culture grade water or a balanced salt solution before introducing cells and medium.

References
1. Tanzer, M. L., Cross-linking of collagen. Science, **180(86)**, 561-566 (1973).
2. Bornstein, P., and Sage, H., Ann. Rev. Biochem., **49**, 959 (1980).

ALF/CMH/MWM/RXR 10/02

Sigma brand products are sold through Sigma-Aldrich, Inc.
Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.