

Product Information

Collagen from human placenta Bornstein and Traub Type IV High performance

Catalog Number **H4417**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Product Description

Collagen is one of the most abundant proteins in connective tissues and internal organs of mammals. It provides the tensile strength of the extracellular matrix (ECM) and is classified into a number of structurally and genetically distinct types. 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.¹⁻⁴

Unlike most collagens, type IV collagen occurs only in basement membranes (BMs) and contains up to six genetically distinct α -chains, designated $\alpha 1(\text{IV})$ through $\alpha 6(\text{IV})$. During development, collagen IV is ubiquitously distributed in BMs. During the maturation process, this network gets partially replaced in a remarkably tissue specific manner, thereby, defining BM structure and function.³

Many different cells have been shown to bind to collagen type IV including platelets, hepatocytes, keratinocytes, endothelial, mesangial, and pancreatic cells, as well as diverse tumor cells.³ Type IV collagen has been found to play a key role in angiogenesis,⁵ neurological diseases,⁶ and metastasis.⁷

The product is supplied as a solution in 0.5 M acetic acid. Lot-specific protein concentration is reported on the label.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

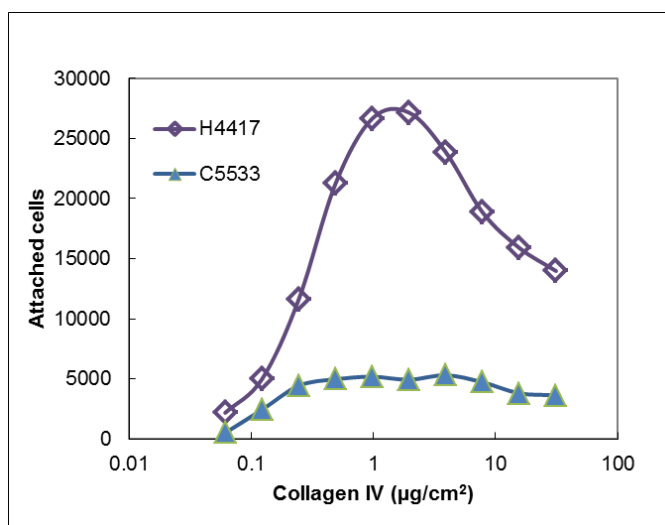
Store the product at $-20\text{ }^{\circ}\text{C}$. Under these conditions the product retains activity for at least 2 years.

Procedure

This product can be used for coating of tissue-culture surfaces to promote cell attachment and proliferation. The amount of Collagen IV needed should be determined by the user and is dependent on the cell type, plastic ware, and incubation time. A recommended amount is $0.05\text{--}5\text{ }\mu\text{g}/\text{cm}^2$ of surface area.

It is recommended to allow 4–16 hours for cell attachment. The attachment properties of this product (Catalog Number H4417) are superior to those of the lower purity product (Catalog Number C5533), see Figure 1.

Figure 1.
Attachment of CHO cells to Collagen IV coated surface



References

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4. Khoshnoodi, J. et al., Mammalian Collagen IV. *Microsc. Res. Tech.*, **71**, 357-370 (2008).
5. Sudhakar, A., and Boosani, C.S., Inhibition of tumor angiogenesis by tumstatin: insights into signaling mechanisms and implications in cancer regression. *Pharm. Res.*, **25**, 2731-2739 (2008).
6. Vahedi, K., and Alamowitch, S., Clinical spectrum of type IV collagen (COL4A1) mutations: a novel genetic multisystem disease. *Curr. Opin. Neurol.*, **24**, 63-68 (2011).
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