

**Effect of Hemostatic Collagen Fleece  
on  $^{14}\text{C}$ -Serotonin Release  
by Human Platelets**

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発行所 ライフサイエンス出版 株式会社  
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# Effect of Hemostatic Collagen Fleece on $^{14}\text{C}$ -Serotonin Release by Human Platelets

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## ABSTRACT

The effectiveness of two types of collagen materials available as topical hemostatic agent, collagen fleece (Novacol) and fibrous form (Avitene), was ascertained by studying the magnitude of  $^{14}\text{C}$ -serotonin release from human platelets, prelabelled with this amine.

It was found that collagen fleece fibers added to platelets in plasma promoted significantly higher release of  $^{14}\text{C}$ -serotonin than an equivalent dose of fibrous form. The reasons for this effect are discussed in view of several reports that both hemostatic agents are equally effective in clinical (patient use) as well as in controlled animal tests.

## INTRODUCTION

The role of platelets in thrombosis has been known for a long time<sup>1)</sup>. Much later it was recognized that it is collagen, either of the basement membranes<sup>2)</sup> or in a fibrillar form, which induces the sequence of adhesion-release-aggregation of platelets resulting in the formation of so-called white thrombus<sup>3)</sup>. Platelet interaction with collagen was utilized commercially in the development of various types of collagen-based topical hemostatic agents, currently used in large scale in various surgical disciplines.

Development of any collagen-based hemostatic material requires the evaluation of actual hemostatic effectiveness in both *in vitro* (platelets) as well as *in vivo* (animal) models. Using platelet-rich plasma, the addition of fine fibrillar collagen (such as the microfibrillar collagen,

