**Introduction**

Physiological wound healing is a highly regulated process, which can be divided into the three stages of hemostasis, inflammation, and repair. Hemostasis with fibrin formation contributes to the formation of a protective wound scab. This facilitates the following steps by providing a matrix within which cell migration and angiogenesis can take place. Wound dressings consisting of oxidized regenerated cellulose or collagen are often used in treatment of surgical wounds as well as chronic wound care. These biomaterials offer interesting properties such as being absorbable and possessing hemostatic effects. A comprehensive in vitro study was performed to compare the hemostatic properties of wound dressings consisting of collagen and/or oxidized regenerated cellulose.

**Results**

All biomaterials tested were found to overall enhance coagulation. However, they yielded different results in the various in vitro tests used. None of the materials affected PT and aPTT (data not shown). Only bovine collagen achieved a significant shortening of the time to thrombin generation in the thrombin generation assay (Figure 1). A pronounced effect on the blood clotting index was observed for collagen and collagen+ORC (Figure 2). Furthermore, none of the materials led to a distinct release of PMN elastase from granulocytes (Figure 3). However, a slight hemolytic effect of ORC and collagen+ORC was detected (Figure 4).

**Discussion**

The use of in vitro techniques enables the direct comparison of the hemostatic properties of wound dressings under standard conditions. Biomaterials have different effects on hemostasis. Collagen only shortened the thrombin generation in the cascade of blood coagulation. Bovine collagen showed the highest hemocompatibility in vitro. Hence, products consisting only of collagen might be superior to the combination of collagen and ORC.