

# Bovine thrombin

**Thrombin** is a common hemostatic drug used in surgical practice for over 100 years because of its simplicity and efficacy. Thrombin converts fibrinogen to fibrin, activates platelets, and induces vascular contraction. It is available in multiple forms, including human thrombin, bovine thrombin, and, most recently, human recombinant thrombin. Over 100 case reports of adverse reactions to bovine thrombin include hemorrhage, thrombosis, and substantial immune reaction when used on cardiovascular surgery patients. Approximately 30% of patients exposed to bovine thrombin develop cross-reacting antibodies. Thirty percent of patients with ant clotting factor antibodies develop abnormal coagulation that can be detected by prothrombin time, partial thromboplastin time, or thrombin time, which makes anticoagulation monitoring difficult. Patients with multiple elevated antibodies prior to surgery are also more likely to sustain adverse events. Animal studies confirm these immunological responses seen in humans. With the available clinical and laboratory data, a less immunogenic yet biologically effective thrombin should be available for use in our surgical patients <sup>1)</sup>.

<sup>1)</sup>

Diesen DL, Lawson JH. Bovine thrombin: history, use, and risk in the surgical patient. Vascular. 2008 Mar-Apr;16 Suppl 1:S29-36. Review. Erratum in: Vascular. 2009 May-Jun;17(3):181. PubMed PMID: 18544303.

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