

Native Bovine Activated Protein C

Cat. No. AC-63B **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Activated protein C is prepared from purified protein C by activation with thrombin followed by ion exchange chromatography.
Species	Bovine
Source	plasma
Description	Activated protein C (APC) is an anticoagulant serine protease derived from the two chain, vitamin K-dependent zymogen, protein C. A complex between alpha-thrombin and thrombomodulin catalyzes a single cleavage at Arg-12 (Arg-14 in bovine) in the heavy chain of protein C, to generate activated Protein C. Several non-physiologically relevant proteases such as RVV-X activator, trypsin, and PROTAC are also capable of activating protein C. APC functions as an anticoagulant which catalyzes the proteolytic inactivation of the cofactors, factors Va and VIIIa, leading to inhibition of the prothrombinase and factor Xase complexes. The inactivation of factors Va and VIIIa is both Ca²⁺ and phospholipid dependent. The vitamin K dependent cofactor, protein S, moderately increases this rate of inactivation by forming a 1:1 complex with APC (K_d=6x10⁻⁹M). Several factors attenuate the anticoagulant activity of APC. Factor Xa protects factor Va from proteolysis by APC by competing for a similar binding site on factor Va. Thrombin has also been proposed as a regulator of APC by proteolytic inactivation of protein S. In addition, APC is regulated by a circulating heparin-dependent protein C inhibitor (PAI-3), a circulating heparin-independent protein C inhibitor, a platelet-derived protein C inhibitor, and PAI-1. The complexes formed between APC and both types of PAI have been reported to account for

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	increased fibrinolysis observed upon infusion of APC or the generation of APC in vivo.
Form	50% (vol/vol) glycerol/H ₂ O
Molecular Mass	52,650
Purity	>95% by SDS-PAGE NOT tissue/cell culture grade. Not tested for endotoxin.
Storage	APC is supplied in 50% (vol/vol) glycerol/H ₂ O and should be stored at -20°C .