



## Effect of Glycosylation on the Enzymatic Activity of Defibrase from *Agkistrodon acutus*

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**SUMMARY.** Defibrase is a kind of glycoprotein purified from the venom of *Agkistrodon acutus* and has been employed as fibrinogen-depleting agent. N-linked oligosaccharide structures of defibrase have been characterized in our previous study yet the importance of carbohydrate for its enzymatic activity was not defined. The aim of the present study was to investigate the effect of glycosylation on the enzymatic activity of defibrase. A deglycosylated form of defibrase was generated by enzymatic cleavage of carbohydrate chains from native defibrase using endoglycosidases F1, F2, and F3. The enzymatic activity of both native and deglycosylated forms of defibrase were compared using coagulating activity studies. The results show that the enzymatic activity of deglycosylated defibrase decreased significantly in comparison to the glycosylated defibrase, which suggests that the N-linked oligosaccharides of defibrase can markedly influence its enzymatic activity.

**RESUMEN.** La defibrasa es un tipo de glicoproteína purificada a partir del veneno de *Agkistrodon acutus* y ha sido empleada como agente de defibrinante. Las estructuras N-asociadas de los oligosacáridos ligados a la defibrasa se han caracterizado en nuestro estudio anterior; sin embargo, la importancia de los hidratos de carbono para su actividad enzimática no fue definido. El objetivo del presente estudio fue investigar el efecto de la glicosilación en la actividad enzimática de la defibrasa. Una forma desglucosilada de defibrasa fue generada por escisión enzimática de cadenas de carbohidratos de defibrasa nativa utilizando endoglicosidasas F1, F2 y F3. La actividad enzimática de ambas formas nativas y desglucosiladas de defibrasa se compararon mediante estudios de actividad de coagulación. Los resultados muestran que la actividad enzimática de defibrasa desglucosilada disminuyó significativamente en comparación con la de la defibrasa glicosilada, lo que sugiere que los oligosacáridos N-asociados ligados a la defibrasa pueden influir notablemente en su actividad enzimática.

**KEY WORDS:** coagulating activity, deglycosylation, thrombin-like enzyme.

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