

Cobra Venom Factor

For Research Use Only. Not for use in Diagnostic Procedures.

Background

Cobra Venom Factor (CVF), sometimes referred to as C3b_(Cobra), is the non-toxic, complement activating component of cobra venom.¹⁻³ Like naturally occurring C3b, CVF forms a complex with complement components Factor B and Factor D. This CVFBbD convertase is capable of activating C3 in a wide variety of species via the alternative complement pathway. Unlike the naturally occurring convertase (C3bBbD), the C3b_(Cobra)BbD convertase is Factor H resistant and is therefore not inactivated by Factor I or CR1. Given appropriate incubation time, CVF will convert nearly 100% of the C3 to C3 end products. Unlike CVF purified from the *Naja naja haje* species, CVF from *Naja naja kaouthia* activates the terminal pathway directly by forming a C5 convertase.^{4,5} This depletes C5 in a manner analogous to that described above for C3. Levels of iC3b, C3a, SC5b-9, C5a and the Factor B cleavage product Bb are all extremely high in CVF treated sera.

Storage and Handling

Purified CVF may be stored at -70°C until the expiration date listed on the vial and the accompanying Certificate of Analysis. CVF should be thawed rapidly at 37°C and immediately placed on ice until use.

Applications

Note: When using any CVF *in vivo* or *in vitro*, it is important to monitor units of activity rather than µg/ml as activity/µg can vary slightly between preparations and suppliers. **In general, one unit of CVF is equal to 2-6 µg of CVF.**

Quidel's CVF has been used in a variety of *in vitro* and *in vivo* models to deplete complement. For *in vitro* experiments, 8-20 units/ml of serum is adequate to convert nearly all the available C3 to C3 fragments when incubated with neat human serum for 60-90 minutes at 37° (data on file at Quidel). This will also convert nearly all the available C5 to C5a and SC5b-9.

Quidel's CVF has also been used successfully in a variety of animal models,⁶⁻⁸ including mice, rats, guinea pigs, various primates, dogs, pigs and sheep to deplete complement *in vivo*. This application has not been tested or verified at Quidel. For a list of studies, please refer to Quidel's expanded bibliographic references for this product, available upon request from Quidel Technical Service.

Specifications

Catalog Number:	A600
Concentration:	1.0-1.2 mg/ml
Purity:	≥ 95% by SDS PAGE
Volume/Vial:	1.0 ml
Activity/Vial:	≥ 350 units
Storage:	≤ -70°C
Buffer:	Phosphate Buffered Saline (pH 7.2 ± 0.2)

References

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- 4 Van Den Berg, C.W., et al. *In vivo* anti complementary activities of cobra venom factors from *Naja naja* and *Naja haje*. J Immunol Meth 12:6, 287-294 (1991).
- 5 Bauman, N. Lack of complement C5 convertase generating activity in *Naja haje* cobra venom factor. J Immunol 120:5, 1763-1764 (1978).
- 6 Till, G.O., et al. Activation of C5 by CVF is required in neutrophil-mediated lung injury in the rat. Am J Pathol 129:144-53 (1987).
- 7 Rajasinghe, H., et al. Key role of the alternative pathway in hyperacute rejection of rat hearts

transplanted into fetal sheep. Transplantation 62:3, 407-426, 1996.

- 8 Koymada, N., Bach, F. Transient complement inhibition plus T-Cell immunosuppression induces long term graft survival of mouse to rat cardiac xenografts. Transplantation 66:9, 1210-1215 (1998).

Ordering and Additional Information

To learn more about this and other Quidel products visit our website www.quidel.com or contact Technical Services at 1.800.524.6318

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