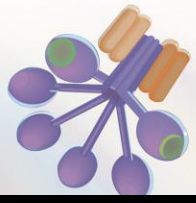
QUIDEL

MicroVue™ Complement



Technical Bulletin

Use of Cobra Venom Factor (CVF) for *In Vitro* Testing

During the course of in-house testing performed with the recently launched MicroVue Pan-Specific C3 Reagent Kit (Cat. #20261), an observation has been made when using Cobra Venom Factor (CVF; Cat. #A600) in the *in vitro* protocol. It has been observed that animal samples incubated with CVF per the *in vitro* protocol, and then assayed using the combination of the MicroVue Pan-Specific C3 Reagent Kit and the MicroVue SC5b-9 Plus EIA (Cat. #A020) do not yield the expected or anticipated results. CVF is used in many *in vitro* and *in vivo* studies to activate the complement cascade by forming a C3-convertase and cleaving the C3 protein. Due to this activity, it was expected that when CVF was used for *in vitro* studies with the MicroVue Pan-Specific Reagent kit, the samples incubated with the CVF would yield low concentrations of SC5b-9 when assayed with the corresponding ELISA kit; however, it was observed that these samples had high concentrations of SC5b-9 after the C3 conversion.

After a thorough investigation, it has been determined that this phenomenon is caused by CVF that is derived from certain species of cobra, including *Naja naja kouthia*, the cobra species from which Quidel's CVF is derived. When combined with a specimen, CVF will form a complex with a cleavage product of Factor B, which is known as CVFBb. CVFBb acts as the C3-convertase and cleaves the C3 protein to continue the complement cascade. This convertase, unlike the native C3-convertase, is resistant to cleavage by Factor H and Factor I and is stable for an extended period of time. When the CVFBb complex is formed using CVF from the *Naja naja kouthia* cobra species, it also functions as a C5-convertase, and can cleave C5 to continue the complement cascade and cause formation of the C5b-9 complex, or TCC.[1] The C5-convertase activity is the reason why the increased concentration levels of SC5b-9 were observed in *in vitro* testing using CVF. This has not been observed during the *in vivo* studies.

Please contact Quidel Technical Support at 800.874.1517 (in the U.S.), 858.552.1100 (outside the U.S.) or technicalsupport@quidel.com if you have any questions regarding MicroVue Pan-Specific C3 Reagent Kit, MicroVue SC5b-9 Plus EIA, Cobra Venom Factor or any Quidel product. Our hours of operation are Monday through Friday, 8:00 a.m. to 5:00 p.m. Eastern Time.

You may also visit our website at **quidel.com** for information on Quidel's line of Rapid Diagnostics, Molecular Diagnostics, Cell Culture and Specialty Products (Bone Health and Autoimmune & Complement). Other product information available on our website includes: CPT codes, CLSI procedure guides, SDS, and Package Inserts.

[1] Krishnan, Vengadesan, Karthe Ponnuraj, Yuanuan Xu, John E. Volanakis, and Sthanam VL Narayana. "The Crystal Structure of Cobra Venom Factor, a Co-factor for C3- and C5-convertase CVFBb." Structure 17.4 (2009): 611-619. Doi: 10.1016/j.str.2009.01.015 Epub 2010 Apr 15.