SEQUENTIAL INTERACTION OF A TANAPOXVIRUS PROTEIN WITH HUMAN BETA2- MICROGLOBULIN AND ALPHA2- MACROGLOBULIN

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The immune system is a vital obstacle for viral infection and disease. Therefore viruses have created numerous strategies to counteract host defenses. Some tactics employ viral proteins to neutralize host immune proteins, such as cytokines, which help coordinate an attack against the virus. The tanapoxvirus (TPV) 2L protein (gp38) from infected cell supernatant was shown to interact with four human cytokines. Subsequent analyses of gp38 expressed and purified from baculovirus showed a loss of binding activity to three of the cytokines. Amino acid sequence of gp38 revealed similarity to major histocompatibility Class I, including a motif involved in binding to human β2- microglobulin (hβ2m). It is well documented that hβ2m binds to human α2- macroglobulin (hα2M), another serum protein capable of binding to numerous cytokines. The major goal of this study was to investigate whether gp38 can potentially complex with hβ2m and hα2M; thus restoring the binding activities described previously. Western blots indicated that gp38 was able to bind to hβ2m. This complex was then capable of binding to hα2M. Whether this complex is able to neutralize previously described cytokines still remains to be resolved. The sequential interaction between viral and host proteins may help reveal TPV immune evasion strategies.