

VP24 and VP30: Two Other Critical Ebola Proteins



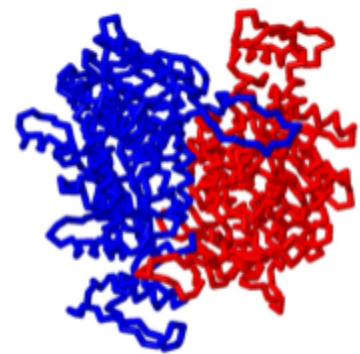
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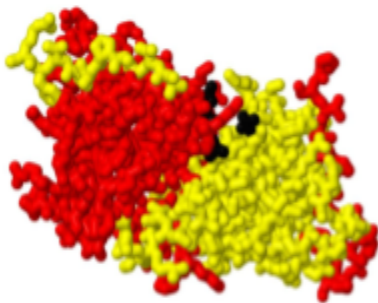
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Ebola Viral Protein 24, like many other viral proteins, inhibits immune response, which significantly increases lethality. The immune response is initiated by STAT1, a protein that, when phosphorylated, is carried to the nucleus by karyopherin alpha proteins to initiate gene regulation. VP24 is known to bind karyopherin alpha proteins, which prevents the transport of STAT1. VP24 can also interact directly with STAT1. This action prevents phosphorylation to begin with. VP24 has been shown to interfere with two vital steps of the immune response, both the initial phosphorylation of STAT1 and its transport via karyopherin alpha proteins.



Ebola Viral Protein 24



*Ebola Viral Protein 30 Bound to
a Nucleoprotein*

Ebola Viral Protein 30 is a phosphorylated protein found in all filoviruses. Many aspects of VP30 remain unknown, but VP30 has been shown to be instrumental in copying Ebola's viral RNA. VP30 has also been shown to be important in the growth of the virus, but it is unclear exactly how this mechanism takes place. VP30 has many phosphorylation sites, and whether these sites are phosphorylated has been predicted to directly impact which roles this protein plays. When VP30 is genetically removed from an Ebolavirus, the virus becomes harmless and is an effective vaccine.

Primary Citations:

Zhang APP, Bornholdt ZA, Liu T, Abelson DM, Lee DE, et al. (2012) The Ebola Virus Interferon Antagonist VP24 Directly Binds STAT1 and Has a Novel, Pyramidal Fold. PLoS Pathog 8(2): e1002550. doi:10.1371/journal.ppat.1002550

Miguel J. Martínez, Nadine Biedenkopf, Valentina Volchkova, Bettina Hartlieb, Nathalie Alazard-Dany, Olivier Reynard, Stephan Becker, Viktor Volchkov. Role of Ebola Virus VP30 in Transcription Reinitiation. Journal of Virology Nov 2008, 82 (24) 12569-12573; DOI: 10.1128/JVI.01395-08

PDB Files:

4M0Q, Ebola virus VP24 structure

5T3T, Ebola virus VP30 CTD bound to nucleoprotein