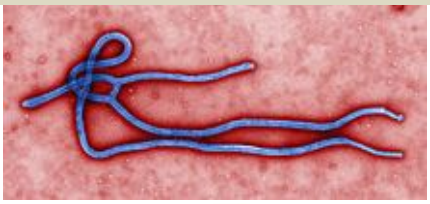
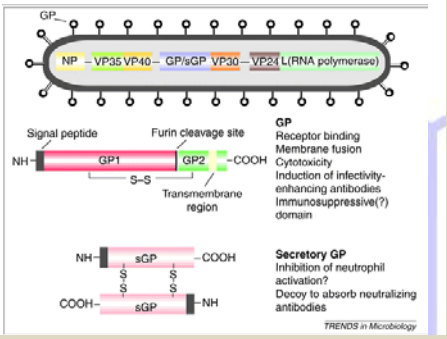
Zaire-Ebola Virus Vaccine ELISA Kits, Recombinant Proteins, and Antibodies

Ebola virus (EBOV) causes severe disease in humans and in nonhuman primates in the form of viral hemorrhagic fever. The name Ebola virus is derived from the Ebola River (a river that was at first thought to be in close proximity to the area in Zaire where the first recorded Ebola virus disease outbreak occurred) and the taxonomic suffix virus. Zaire ebolavirus is a virological taxon included in the genus Ebolavirus, family Filoviridae, order Mononegavirales. The species has a single virus member, Ebola virus (EBOV). Ebolavirus species Zaire (ZEBOV) causes highly lethal hemorrhagic fever, resulting in the death of 90% of patients within days. Most information on immune responses to ZEBOV comes from in vitro studies and animal models. Ebola Zaire attacks every organ and tissue in the human body except skeletal muscle and bone. Ebola is classified as a Level 4 pathogen (higher than AIDS) with a 2 to 21 day (7 to 14 days average) incubation period. There are currently four known strains of Ebola: Zaire, Sudan, Reston and Tai. All cause illness in sub-human primates. Only Ebola Reston does not cause illness in humans. The mortality rate of Ebola victims is between 60% and 90%; with Ebola Sudan at 60% and Ebola Zaire at 90%.





The virions are tubular in general form but variable in overall shape and may appear as the classic shepherd's crook or eyebolt, as a U or a 6, or coiled, circular, or branched. Ebolavirions consist of seven structural proteins. At the center is the helical ribonucleocapsid, which consists of the genomic RNA wrapped around a polymer of **nucleoproteins (NP).** Associated with the ribonucleoprotein is the RNA-dependent RNA polymerase (L) with the polymerase cofactor (VP35) and a transcription activator (VP30). The ribonucleoprotein is embedded in a matrix, formed by the major (VP40) and minor (VP24) matrix proteins. These particles are surrounded by a lipid membrane derived from the host cell membrane. The membrane anchors a glycoprotein (GP1,2) that projects 7 to 10 nm spikes away from its surface. While nearly identical to marburgvirions in structure, ebolavirions are antigenically distinct. Being acellular, viruses do not grow through cell division; instead, they use the machinery and metabolism of a host cell to produce multiple copies of themselves, and they assemble in the cell.

EVD is clinically indistinguishable from Marburg virus disease (MVD), and it can also easily be confused with many other diseases prevalent in Equatorial Africa, such as other viral hemorrhagic fevers, falciparum malaria, typhoid fever, shigellosis, rickettsial diseases such as typhus, cholera, gram-negative septicemia, borreliosis such as relapsing fever or EHEC enteritis. The most common diagnostic methods are therefore RT-PCR in conjunction with antigen-capture ELISA which can be performed in field or mobile hospitals and laboratories. **Vaccines** have successfully protected nonhuman primates; however, the six months needed to complete immunization made it impractical in an epidemic. In 2003, a vaccine using an adenoviral (ADV) vector carrying the Ebola spike protein was tested on crab-eating macaques. The monkeys were challenged with the virus 28 days later, and remained resistant. In 2005, a vaccine based on attenuated recombinant vesicular stomatitis virus (VSV) vector carrying either the Ebola glycoprotein or Marburg glycoprotein successfully protected nonhuman primates, opening clinical trials in humans. There are currently **no Food and Drug Administration-approved vaccines** for the prevention of EVD. The most promising ones are DNA vaccines or are based on adenoviruses, vesicular stomatitis Indiana virus (VSIV) or filovirus-like particles (VLPs) as all of these candidates could protect nonhuman primates from ebolavirus-induced disease. DNA vaccines, adenovirus-based vaccines, and VSIV-based vaccines have entered clinical trials.

ADI has cloned and expressed Ebola virus nucleoprotein (~720 aa, ~82 kda, full length) that is highly antigenic and made appropriate antibodies. Antibody ELISA kit was developed to determine the efficacy of various existing vaccines and test new vaccines. These kits help determine the levels of Ebola virus nucleoprotein antibody during natural infection or in vaccinated individuals.

Notes: None of the reagents used in the kit are derived from Ebola virus or ever exposed to the virus. The proteins are recombinant and antibodies developed in experimental animals such as mouse and rabbits. So there is no cause for any concerns in using the Ebola virus antibody ELISA kits.

Zaire-Ebola vaccine Related ELISA kits

ELISA Kit Description	Species	Total Ig's	IgG Specific Cat#	IgM Specific Cat#
Zaire-Ebola Virus Vaccine antibody ELISA	Rabbit		AE-320540-1	
	Mouse		AE-320500-1	AE-320510-1
	Human		AE-320520-1	AE-320530-1
	Monkey		AE-320550-1	AE-320560-1

Zaire-Ebola vaccine Related Antibodies, Proteins and other Reagents

Item	Catalog#	Product Description	Product Type
Zaire-Ebola virus proteins and antibodies	ZEV11-C	Recombinant Zaire-Ebola virus nucleoprotein protein control for Western	Western control
	ZEV11-S	Rabbit Anti-Zaire-Ebola virus nucleoprotein protein protein antiserum	Antiserum
	ZEV12-M	Monoclonal Anti-Zaire-Ebola virus IgG, aff pure	Antibodies
	ZEV15-R-10	Recombinant (E.coli) Zaire-Ebola virus nucleoprotein protein(full length 82 kda), purified	Antigen protein

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@atzlabs.com Website: www.atzlabs.com