



## **TECHNOLOGY**

# **N60-B1.1, a potent broadly neutralizing antibody and HIV-1 vaccine candidate**

## **OVERVIEW**

Since the discovery of HIV/AIDS in the early 80's, a considerable amount of effort has been put forth in the development of successful treatment options for patients. One successful treatment option has been the use of broadly neutralizing antibodies isolated from HIV-1 positive donors. Though superior in their protective abilities compared to strain-specific neutralizing antibodies, there is still a need for improved prevention and treatment options. A HIV vaccine is highly sought after as the ultimate solution to prevent and treat HIV.

This technology is a unique HIV-1 broadly neutralizing human monoclonal antibody, N60-B1.1 that can be used for diagnosis and treatment of HIV. N60-B1.1 binds a novel epitope that is distinct from the known binding sites used by other broadly neutralizing HIV-1 antibodies. More specifically, N60-B1.1 freezes the virion in a transitional conformation structure that is unable to proceed to the next step of HIV-1 infection. This allows the virions caught in this conformation to be effectively targeted by anti-HIV-1 drugs. The fusion protein immunogens containing the HIV-1 in this transitional conformation can be used to generate immune responses and thereby potentially used in vaccine formulations. The N60-B1.1 antibody additionally has the potential to neutralize viruses that are currently resistant to other available HIV-1 antibodies.

## **APPLICATIONS**

- 1) **Diagnosis & Treatment:** N60-B1.1 antibody can be used to diagnose the presence of HIV-1 infection and can also be used to neutralize the virus in infected persons.
- 2) **Drug target:** Binding of N60-B1.1 defines a common transitional conformation structure of HIV-1 envelope that is a novel drug target for HIV-1.
- 3) **Vaccine candidate:** The recombinant fusion protein immunogens can be used to generate a protective N60-B1.1 like broadly neutralizing antibody immune response and can therefore be used to develop HIV-1 vaccines.

## **ADVANTAGES**

- 1) N60-B1.1 is unique and can complement other broadly neutralizing HIV-1 antibodies.
- 2) It defines a common transitional conformation of the HIV-1 envelope protein.
- 3) It can be used to generate an immune response.
- 4) It provides a drug target and potential vaccine formulation.

## **LICENSING POTENTIAL**

UMB seeks to develop and commercialize by an exclusive or non-exclusive license agreement and/or sponsored research with a company active in the area.

## **CONTACT INFO**

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## **Additional Information**

### **INSTITUTION**

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### **PATENT STATUS**

US Patent OPP 9,951,106 issued 04/24/2018

### **LICENSE STATUS**

Exclusively licensed

### **INVESTIGATOR(S)**

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