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Stimulation of Broadened Immunity using Immune Refocusing Technologies

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Abstract

Infection with HIV stimulates strain-restricted immune responses to immunodominant epitopes. Sequences within the epitopes are highly variable among strains and can evolve to escape immune pressure. In the past decade, several human antibodies with broadly cross-neutralizing activities have been derived by multiple groups. Numerous immunological studies have indicated that immunization with antigens containing native gp120/gp160 amino acid sequences stimulate strain-restricted immunity and not broadened neutralizing antibodies. Further analysis suggests that the induction of strain-restricted antibodies may interfere with or prevent the stimulation of antibodies with cross-neutralizing activities. Rational antigen design technologies such as Immune Refocusing are intended to improve the breadth of immune responses by reduces the antigenicity of the variable immunodominant epitopes. Evidence to support this technology and its applications to HIV vaccine design will be presented

Biography

Dr. Gregory J. Tobin is the Chief Scientific Officer of Biological Mimetics, Inc. in Frederick MD. Dr. Tobin directs research and development efforts in the discovery of novel vaccines against HIV-1 and other pathogens that stimulate strain-restricted or otherwise non-protective forms of immunity. Prior to joining BMI, Dr. Tobin headed the Gene Expression/Regulation group at the NCI-Frederick where he led multiple projects associated with HIV vaccine discovery and the development of animal models for cancer and AIDS. Dr. Tobin earned his PhD in Medical Sciences from the University of Florida College of Medicine and performed postdoctoral research at the University of Pittsburgh and the National Cancer Institute. www.bmi-md.com.

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