Asian J Biomed Pharmaceut Sci 2018, Volume 8 | DOI: 10.4066/2249-622X-C3-009

THE ACCESS TO PRODUCE COMPATIBLE VIRAL VACCINES FOR INDIVIDUALITY

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There is a question why viral vaccines cannot be effective for everybody. This is a question that we need to revise our knowledge and manipulate in the right direction for the viral vaccine production. To prevent a viral infection, a body must produce a protective antibody to prevent the viral particle to attach the viral receptor on a target cell. Theoretically, adaptive immunity needs induction not only by an antigen but also our cellular molecule called major histocompatibility complex (MHC) to form a complex molecule with its appropriate epitope to activate a specific receptor of T cell. There are two classes of MHC molecules called class I and class II. MHC class I is required for inducing cytotoxic T cell while MHC class II is for helper T cell. Helper T cell plays a key role to induce an effective stage of acquired immunity including a specific protective antibody. To produce the viral-specific antibody, MHC class II plays a key role to induce helper T cell and then B cell to synthesize a specific antibody. Since the MHC gene alleles are highly polymorphic so the possibility that individuals have the same gene alleles might be one in a million which, mostly, can be found in those who are an identical twin. Accordingly, a subunit viral vaccine, which contains a limit number of epitopes, would reduce a capacity of an antigen presenting cell, such as a dendritic cell, to process some epitopes to induce the helper T cell clones. Subsequently, in some people, the corresponding B cell clones cannot synthesize the specific antibody to neutralize the infectious viral particle. Accordingly, this presentation will present the novel approach to develop the viral vaccine for everybody.