Abstract

The ultimate goal of this three-year project is to identify peptides that mimicking the immunodominant epitopes of the group B Neisseria meningitides (GBM) to be used as the basis for development of the peptide vaccine for GBM. The specific aim of this first year project is to prepare antibodies specific for GBM but do not cross-react with human cells to be used as the molecular tools for epitope mapping. To achieve this aim, spleen cells of GBM-immunized mice with high serum anti-GBM titer were fused with Sp2/0 cells. The immunogen-reactive clones were identified by whole- cell ELISA. To select antibodies against GBM but do not cross-react to human cells, culture supernatants were evaluated for reactivity to human neuroblastoma cell line IMR-32 by ELISA. Among the 40 test culture supernatants, 11 gave a negative reaction. The ability of six GBM-positive-IMR-32-negative supernatants to activate bacteriolysis in the presence of human complement was tested. All tested supernatants elicited complement-mediated bacteriolysis in a dose-dependent manner. The antigenic specificity of these antibodies was defined to be the capsular polysaccharides because no binding activity was observed when ELISA was performed with uncapsulated GBM. Peptides that mimic the carbohydrate-epitopes of these antibodies will be obtained by affinity selection of phage display random peptide libraries in the following year.

Key Word：Neisseria meningitidis、Monoclonal antibodies、Phage display、Epitopes、Peptide vaccine