

28AB-ISMS10 Development of Functional Monoclonal Antibodies Targeting at GPCR for Drug Discovery

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G-protein coupled receptors (GPCRs) are superfamily of transmembrane proteins involved in signal transduction. GPCRs are important proteins as drug target, and up to now, several therapeutic antibodies targeting at GPCRs are on the market. NBHL is developing functional antibodies that recognize native form GPCR and directory modulate signal transduction. In the immunization process, we use animal cells expressing GPCR on cell surface or plasmid DNA encoding GPCR cDNA. We use high-throughput flow cytometry system to screen hybridoma cells producing antibody. Using these immunization- and screening-technique, we succeeded in generating monoclonal antibodies which bind to native form GPCR with high affinity. In addition, some of these antibodies directly modulate signal transduction such as cAMP accumulation, calcium influx and β -arrestin recruitment. We are now investigating the pharmacology functional antibodies using animal model of disease. In this poster, we introduce our antibody technology and development process for therapeutic antibody.