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To whom it may concern:

Chiome Bioscience Inc.

Success in generation of antibody against multiple-trans-membrane protein by *in vitro* antibody generation technique: the ADLib® system

Chiome Bioscience Inc. (head office: Ichigayatamachi, Shinjuku-ku, Tokyo; Masaaki Fujiwara, Chief Executive Officer), hereinafter referred to as Chiome, has succeeded in preparing antibodies against multiple-trans-membrane proteins, using Chiome's ADLib® (Autonomously Diversifying Library) system.

The ADLib® system is quite innovative and unique technology that enables generation of monoclonal antibodies rapidly *in vitro* by constructing a library of highly diversified avian antibody-presenting cells through a homologous recombination process called gene conversion. Chiome has concluded contracts with multiple companies and academic institutions for consignment and acceptance, as well as for collaborative study of antibody generation based on this technique. In a contract to prepare antibodies against four-trans-membrane proteins, we successfully prepared a highly-specific monoclonal antibody using a novel antibody screening method based on animal cells expressing the target antigen.1) This success in generation of antibody against four-trans-membrane protein, as well as our previous successes in preparing antibody against one-trans-membrane protein, demonstrates the general versatility of the ADLib® technique.

"Many multiple-trans-membrane proteins have been candidates for potential drug targets for treatment of cancers and immunologic diseases. In actual fact, however, antibodies including the antibody against the seven-trans-membrane protein known as G-protein-coupled receptor2) (GPCR) have not been obtained satisfactorily or easily by conventional antibody generation methods. I think that this success is of great significance because it paves the way to offering antibodies effective against these potential drug targets in a very short time," Masaaki Fujiwara, Chief Executive Officer of Chiome, said. "We recognize the needs of many companies for generation of antibody against these targets, and we will contribute to new developments in antibody generation through collaborative research with these companies."

< Reference information >
1. Antibody screening method with animal cells expressing the target antigen

In order to rapidly generate monoclonal antibody that binds specifically to a multiple-trans-membrane protein localizing on the cell membrane while maintaining the
natural conformation, animal cells expressing the multiple-trans-membrane protein as a target of the antibody generation are applied to antibody screening using the ADLib® system (see figure below). Patent applications for the fundamental technology have already been submitted.


2. G-protein-coupled receptor

In genomic drug discovery based on a mechanism of cell information recognition, the target molecules that many researchers and companies have studied with the most specific and practical results have been the drug receptors, including the G-protein-coupled receptor (GPCR). GPCR refers to a group of receptors that couple with the G proteins for signaling. These receptors have the common structural properties of passing through cell membranes repeatedly seven times. Although 700 to 800 GPCRs may exist in the entire human genome, only about 250 of these receptors have known ligands, and the remainders are orphan receptors. In addition, extensive portions of the physiological phenomena involving GPCR remain to be elucidated. Because these receptors are often associated with diseases, the GPCRs are targeted by many kinds of existing pharmaceuticals for the treatment of a variety of different pathological conditions. This makes GPCRs essential, not only in terms of materials for basic research but also for applied research and as a target of pharmaceuticals. Today, in both the industrial and academic worlds, these conditions have resulted in intense competition in this research area. Successful elucidation and manipulation of GPCRs could lead to notable growth in large potential markets.
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