



Press Release

June 21, 2013

Chiome Bioscience, Inc.

## **Chiome Bioscience Announces The Development of a Fully Human ADLib<sup>®</sup> System**

**Tokyo, Japan – 21 June 2013**

Chiome Bioscience Inc. has announced they have successfully engineered a DT40 cell line for the “prototype” human ADLib<sup>®</sup> library, thus meeting all essential criteria required to develop a fully human ADLib<sup>®</sup> system. Inside the engineered DT40 cell line, human immunoglobulin genes were introduced into the immunoglobulin light chain (LC) and heavy chain (HC) gene locus. The essential criteria required for a “prototype” fully human ADLib<sup>®</sup> system is;

- 1) Gene conversion takes place on both LC and HC
- 2) It expresses human IgG on the cell surface
- 3) It secretes human IgG in the medium
- 4) Diversified sequences of human antibody are generated by gene conversion.

In February, Chiome announced that gene conversion on the LC and HC having artificial pseudogenes in the same DT40 cell line were observed. Then in March, further progress was announced noting that rigorous requirements for the “prototype” were determined in order to bring the human ADLib<sup>®</sup> system closer to practical use.

Since then, Chiome has integrated a greater number of artificial pseudogenes with human immunoglobulin sequences into DT40 cell lines in which variable and constant region of human immunoglobulin LC and HC had already been introduced. This work involved improvement of the gene knock-in strategy and efficient pseudogene construction. As the result, Chiome scientists observed a significant increase in diversity of the human IgG sequences, and hence, concluded that the “prototype” human ADLib<sup>®</sup> library was successfully achieved. This fully demonstrates that a sufficiently diversified human antibody library for



commercial use can be built by the same approach.

Currently, there are two major objectives to meet before launching a fully human ADLib<sup>®</sup> system for commercial use. They are;

- 1) Diversification of selected clones by TSA treatment and evaluation of the resulting library.
- 2) Evaluation of fully human ADLib<sup>®</sup> libraries by testing its performance for antibody generation against tough antigens.

Chiome will continue making efforts to increase the number of pseudogenes with human sequences in progenitor DT40 cells. With this approach, diversity of the human ADLib<sup>®</sup> libraries will be expanded to a level comparable to the existing IgM and IgG ADLib<sup>®</sup> system. Chiome will also perform proof-of-concept studies to isolate specific antibody against tough antigens using the human ADLib<sup>®</sup> library. Chiome plans to launch the fully human ADLib<sup>®</sup> system in March 2014.

<About the ADLib<sup>®</sup> system>

The ADLib<sup>®</sup> system is an innovative technology for antibody generation by leveraging gene conversion of chicken DT40 cells. It generates antibodies quite fast, potentially in about 10 days entirely in vitro. Also it generates antibodies with, theoretically, unlimited diversity, which allows for the development of antibodies that have been considered to be difficult by currently available methods. Chiome has also successfully launched libraries that generate directly mouse-chicken IgG antibody from DT40 cells. ADLib<sup>®</sup> is the trademark of Chiome Bioscience.

<About Chiome Bioscience, Inc.>

Chiome is a Japan-based biotech company specialized in antibody and technology development. It has developed an innovative and unique platform technology, ADLib<sup>®</sup> system, to which right Chiome co-owns with RIKEN Institute. Since 2008, it has been engaged in joint research and the generation of antibodies with a number of leading domestic and multinational pharmaceutical and diagnostic companies. Chiome offers ADLib<sup>®</sup> system to partners under a



non-exclusive license to maximize the value of the technology. By leveraging this proprietary technology Chiome Bioscience believes it can make great contributions to pharmaceutical development.

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