June 11, 2009

Toyobo Develops New Expression Vector for Stable and High Efficiency Production of Antibody Drugs

Toyobo Co., Ltd. and Osaka University Graduate School have jointly developed a new expression vector (High Expression Vector) which makes it possible to quickly and easily obtain animal cells which produce antibodies stably and efficiently. The expected applications include the provision of technology to pharmaceutical manufacturers and the consigned bulk manufacturing of antibody drugs using the High Expression Vector at our subsidiary Toyobo Biologics Inc. (TBI).

1. Development Background

In recent years, the global market for antibody drugs as curative medicines for cancer and rheumatism has been rapidly expanding, and has already exceeded ¥3.0 trillion. Because antibody drugs have a high curative effect and few side-effects, this market is expected to continue expanding from now on.

The antibodies for antibody drugs are presently produced by inserting the desired antibody genes into circular DNA expression vectors, followed by the mass cultivation of animal cells into which these expression vectors have been introduced. When conventional expression vectors are used, however, the introduced antibody genes frequently fail to produce the antibodies or cease production while being cultured, and thus it has required great amounts of time to obtain animal cells which produce the antibodies stably and efficiently.

Toyobo has now developed a High Expression Vector though joint research with Associate Professor Takeshi Omasa of Osaka University Graduate School of Engineering. This High Expression Vector was developed making full use of Toyobo's accumulated genetic engineering and cell culturing technologies.

2. Product Characteristics

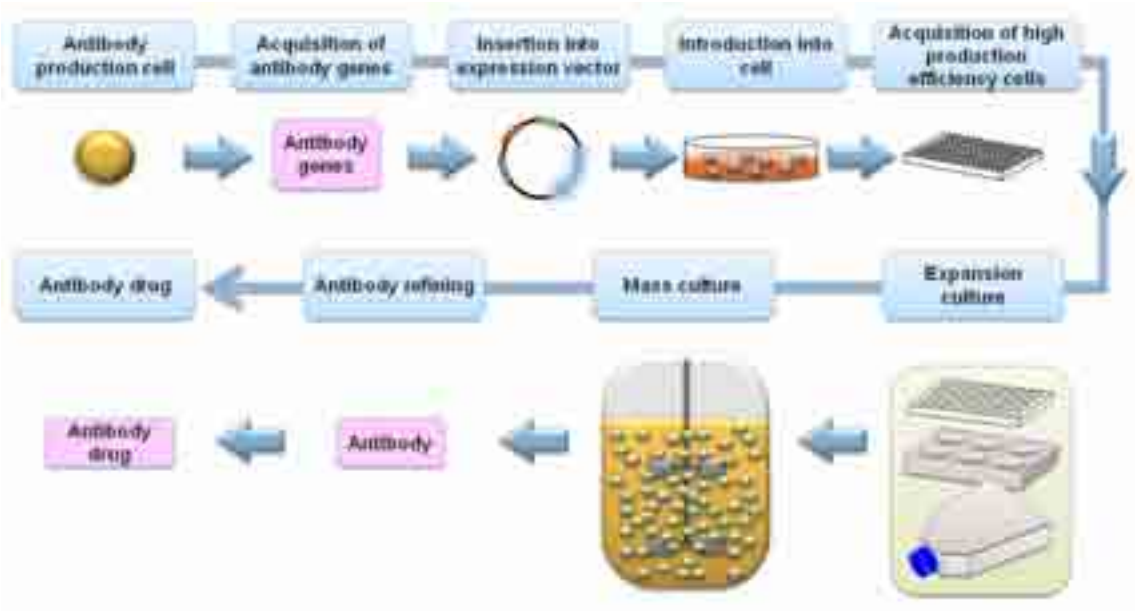
By using the High Expression Vector, it becomes possible to quickly and easily obtain animal cells which produce antibodies stably and efficiently.

3. Future Developments and Sales Plans

Toyobo has positioned contract manufacturing of antibody drugs as one business for entry into the growing antibody drugs market. We expect the High Expression Vector will be used for antibody drugs manufacturing. Expected applications include technology provision to pharmaceutical manufacturers and the contract manufacturing of bulk antibody drugs using the High Expression Vector at TBI, starting from September 2009. The company has adopted a combined sales target of ¥2.0 billion per year, for the time being.

Further details concerning the High Expression Vector will be announced at the 22nd Interphex Japan exhibition which takes place from July 1st through July 3rd at Tokyo Big Sight in central Tokyo.

Antibody Drug Production Flow



Explanation of Terms

Antibody drugs: Antibody drugs are drugs with antibodies (which are a type of protein) as the main ingredient. Antibodies have high affinity and specificity to molecular targets. For example, in cancer remedies antibodies can specifically recognize cancer cells and attack them. Antibody drugs have the advantage of few side effects or adverse reactions, because antibodies are originally proteins present within our bodies.

Expression vectors: Expression vectors are circular DNA (gene carriers) used to introduce target genes into cells in order to express target proteins. By introducing expression vectors with inserted antibody genes into cells, those cells can be used to produce antibodies.

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