

Vectors for the Recombinant Expression of Human Immunoglobulins

Tech ID: 10027 / UC Case 1990-558-0

DESCRIPTION

Monoclonal antibodies (mAbs) are an essential tool in numerous research, therapeutic, and diagnostic applications, as mAbs can be customized to bind a desired antigen. While this is highly advantageous in generating very high binding specificity, the actual process of producing mAb-producing hybridomas is difficult and time-consuming, and involves mAb protein chains (immunoglobulins) derived from animal sources that are not always suitable for use in humans.

Researchers at the University of California have developed a set of vectors for use in an alternative method for producing purified, humanized antibodies, based on the expression of recombinant human immunoglobulins in cell culture. These vectors, which are being made available for bailment as tangible research property, can be used to express PCR-generated variable regions or variable regions cloned directly from a cell line in conjunction with the constant regions. Thus, expression of the UC vectors can provide complete heavy or light chains or libraries of heavy or light chains expressing variable regions of interest.

This expression system eliminates the need for hybridomas, and makes possible the facile production of human mAb proteins that are suitable for *in vivo* or *in vitro* use. They include gene sequences for the kappa light chain and for the IgG-1, IgG-2, IgG-3, IgG-4, and IgA heavy chains, along with various selectable markers (*his*, *neo*, and *gpt*). In the case of the kappa and gamma-1 chains, more than one vector is available. This range of vectors permits the design of antibody-specific therapeutic and diagnostic agents based on human immunoglobulins. Such recombinant antibodies avoid allergic reactions typical of mAbs, and may also be useful in various specialized research applications where conventional techniques for generating antigen-specific beta lymphocyte cell strains, etc., are not practical.

PATENT STATUS

Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Vectors for Antibody Expression](#)
- ▶ [Production of Secretory IgA with Increased Stability](#)

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OTHER INFORMATION

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Genomics
 - ▶ Health
 - ▶ Other
- ▶ **Medical**
 - ▶ Therapeutics

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