ABSTRACT

MATRIX ATTACHMENT REGIONS AND METHODS FOR USE THEREOF

The present invention relates generally to matrix attachment regions (MARs) and to methods for use of MARs. In particular, the invention relates to the uses of such methods for the development of stable eukaryotic cell lines. Eukaryotic cell lines can be genetically modified to express one or more desired proteins. Current selection and screening procedures to identify a clonal cell line with the requisite expression characteristics for regulated expression or production are tedious and time-consuming. For example, in Chinese hamster ovary (CHO) cells, the classical approach to achieve maximal expression involves the use of mutant cell lines and a gradual increase in the selection pressure over several months for a co-transfected selection marker such as dihydrofolate reductase. While new approaches to the problem include the identification of rare sites on a chromosome with high transcriptional activity, combined with targeted integration and the improvement of selection and of screening procedures, these are nevertheless all labor-intensive processes.