

Monoclonal antibodies: a review of therapeutic applications and future prospects

ABSTRACT

The increasing demand for monoclonal antibodies (mAbs) used for diagnostic and therapeutic applications has led to the development of large scale manufacturing processes, with improvements in production achieved through continuous optimization of the inherent systems. The number of monoclonal antibodies (mAbs) that have already been approved for therapeutic applications and for use in clinical trials have significantly increased in the past few years. In view of the side effects and limitations of mAbs, several improvements and modifications to monoclonal antibodies have been developed. These modifications have facilitated the use of mAbs in various forms of therapeutic applications such as treatment of infectious diseases caused by bacterial, viral, fungal and parasitic organisms. Monoclonal antibodies have also been applied in the treatment of non-infectious diseases such as cancer, immune diseases, arthritis and other disorders resulting from organ transplantation. This review highlights mAbs applications in biomedicine, and discusses state-of-the-art technologies related to their potential uses.

Keyword: Monoclonal antibodies; Therapeutic application; Infectious diseases; Cancer; Auto-immune diseases; Metabolic disorders