Abstract

Charles University in Prague
Faculty of Pharmacy in Hradec Králové
Department of Pharmacology and Toxicology

Candidate: Jana Vondráčková
Supervisor: Doc.PharmDr. František Štaud, Ph.D.
Title of diploma thesis: Monoclonal antibodies in cancer treatment

Monoclonal antibodies are produced by the only one clone of B-lymphocytes and so they assign the same antigen specifity. That is reason why they have ability to bind to epitops of specific surface cancer antigens or solubile proteins.

Killing cells by activating of immune system and inhibition of transduction signal are mechanism of action of monoclonal antibodies. They are divided up conjugated and unconjugated antibodies.

The most common targets of action are membrane proteins (such as CD20, CD52, CD22, CD80, CD30, CD40), growth factors (VEGF, IL-6), receptors (EGFR, VEGFR), adhesive molecules (EpCAM, integrines) etc.

In 1997, FDA allowed their clinical use in cancer treatment. Rituximab was the first antibody established in clinical practice for treatment of B-NHL.

Monoclonal antibodies are used in diagnosis and in therapy of many types of diseases. They play the important role in transplant medicine, in oncology and in the treatment of autoimmune diseases either.

This thesis deals with monoclonal antibodies in treatment of cancer diseases.