

Learning unit: Biological treatment

Impact of the learning unit:

Biological treatment is a modern treatment option frequently used in various indications. The numbers of new biologics are growing. Pharmacological properties of these drugs are different from conventional (chemical) drugs. Therefore, physicians need to know the principles of biological treatment.

Relevant terms

targeted therapy

biological treatment

- white blood cell growth factors

- red blood cell growth factors

- interferons

- hormones

- monoclonal antibodies against soluble proteins

- monoclonal antibodies against receptors and surface antigens (CD)

- fusion proteins

gene therapy

somatic cell therapy

manufacture of biologic drugs

- recombinant production

- PEGylation

- production of monoclonal antibodies

nomenclature of monoclonal antibodies

Learning outcomes

Student characterizes targeted and biological therapy and explains general differences between conventional and biological therapy.

Student explains what is gene therapy and somatic cell therapy. Student describes advantages and disadvantages of biological therapy.

Student explains the principles of recombinant production of drugs and production of monoclonal antibodies.

Student describes the influence of PEGylation on biologic drug pharmacokinetics.

Student has general knowledge about specific groups of biologics, names some agents and their indications.

Study materials

Rang & Dale's Pharmacology, 8th edition, 2016, chapter 59 (Biopharmaceuticals and gene therapy)

Study materials for courses aVLFA0721p and aVLFA0721c.

Exam questions

General pharmacology: 30. Principles of biological therapy – classification, technology, examples of use