

Abstract

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Title of diploma thesis: New advances in the diagnosis and therapy of colorectal cancer

Colorectal cancer is one of the most common cancers, which is why great efforts are still being made to find more effective therapies. A major problem remains that a significant percentage of patients are still diagnosed with advanced-stage colorectal cancer, which is generally more difficult to treat.

A significant advance in therapy occurred with the beginning of molecular testing and the gradual discovery of signalling pathways that are involved in the process of carcinogenesis. The first targeted agents used to treat CRC were monoclonal antibodies against the EGFR and VEGF receptors. In addition, substances that affect the HER-2 and PI3K/Akt/mTOR signalling pathways have been developed. In the treatment of CRC, we can also use immunotherapy, which is focused on the control points of the immune response. However, many substances are still in development, and various combinations of substances are also being tested, which can avoid certain resistance and accordingly have higher effectiveness.

This thesis describes the diagnostic methods and therapy used in the treatment of colorectal cancer, with a particular focus on the development of targeted inhibitors from the range of small molecules and monoclonal antibodies.