Method for determining the sensitivity of patients towards the cancer treatment by HER family (namely EGFR and HER-2) inhibitors

Introduction:
The human genome revolution brings large quantities of new molecular information and has spawned impressive high-throughput analytical technologies. This knowledge provides new research tools and raises the possibility of developing novel therapeutics and disease biomarkers that diagnose and treat each patient as an individual. Such opportunity has profound implications for those in charge of delivering them into a clinical setting. The future medicinal product development changes fundamentally through the involvement of pharmacogenetics and develops increasingly towards an individualized (personalized) medicine. Predictive biomarkers are particularly important, since they help clinicians to stratify patient population into groups with highest/lowest therapeutic benefit. Moreover, application of predictive biomarkers in early clinical development of new drugs helps to improve the design of clinical trials and increase response rates.

Technology description:
A method for determining the sensitivity of patients towards the cancer treatment by HER family (namely EGFR and HER-2) inhibitors is provided, using a new biomarker, the expression of which highly correlates with progression-free survival and overall survival in HER positive tumors, particularly of breast, colorectal, lung, pancreatic, head and neck, brain, prostate or skin. The method is based on analysis of posttranslational modifications of S6 ribosomal protein and can be carried out on a tumor biopsy sample or on a sample of body liquid using immunochemistry, mass spectrometry and/or other analytical tools.

Advantages:
The biomarker is frequently expressed in patient population and allows for a quick and reliable distinction between the patients benefiting from HER targeted therapies and the patients for whom this medication would not bring a positive effect, and which can then be indicated for other, more effective therapies.

Development status:
Laboratory scale, extensive validation study on patient tissues

Commercial offer:
Exclusive/non-exclusive license to the know-how and data

Ownership:
Institute of Molecular and Translational Medicine, Faculty of Medicine and Dentistry, Palacky University, Olomouc
Masaryk Memorial Cancer Institute, Brno

Contact:
More information is available upon signing a CDA/NDA. Please contact IMTM´s director (director@imtm.upol.cz) or the technology transfer office (tto@imtm.upol.cz)