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“Identification of biomarkers and effective treatments against Herceptin-resistant breast cancer”

Herceptin resistance remains a challenge in the successful treatment of HER2-positive breast cancer. Overexpression of HER2 is observed in 20-25% of all breast cancers. Novel therapy overcoming Herceptin resistance can be promising for the success in treatment of HER2-positive breast cancers. The main aim of our study was to identify biomarkers and develop epigenetic approaches with therapeutic potential. Multiple analyses via Western Blot and Cell Proliferation (MTS) assays were performed to detect specific proteins and determine cell sensitivity to Herceptin, respectively. As a result, we identified potential targets and treatments against Herceptin-resistant breast cancer. Panobinostat is an inhibitor for Histone Deacetylase (HDAC). A combination drug treatment was shown to enhance the overall induction of apoptosis. Herein we disclose the effects of a potent anti-proliferative pathway for overcoming Herceptin resistance. These results could indicate a promising method for the reduction/elimination of mortality related to Herceptin-resistant breast cancer.