Breast cancer is the most frequent malignancy in Polish women. Its cells may express sex hormone receptors, including estrogen (ER) and progesterone (PgR) receptors. In the vast majority of cases, the tumor produces either both receptor types or none. The co-expression of ER and PgR has better prognosis than tumors which do not produce hormone receptors. In clinical practice, there are also tumors which express either ER or PgR alone. To date little is known about their molecular characteristic and clinical course. The aim of this project is to describe clinicopathological features of ER-positive PgR-negative and ER-negative PgR-positive breast cancers and to study their molecular features, including expression of various subtypes of hormone receptors on mRNA level and microRNA profile. We hypothesize that some non-routinely evaluated hormone receptors (e.g. ERβ, androgen receptor), significantly influence the biology of these tumors and that some microRNAs interfere with hormone receptors expression, thus participating in the pathogenesis of ER-positive ER-negative and ER-negative PgR-positive breast cancers. Conclusions of our project will shed a light on clinical course and pathogenesis of “single receptor positive” breast cancers. All of this may translate into improved treatment results and patients’ outcomes.