ESTABLISHMENT AND CHARACTERIZATION OF NEW ENDOMETRIAL CANCER CELL LINES

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Endometrial cancer is the sixth most common cancer in the world, with Lithuania and Poland leading in Europe [1]. Common risk factors of endometrial cancer include older age, hormone therapy, obesity, hyperglycemia, diabetes, and some genetic disorders. Paclitaxel, cisplatin, and carboplatin are the first-line chemotherapy drugs that are used to treat endometrial cancer. However, new targeted therapy agents are constantly under development [2]. Cell lines are standard *in vitro* model systems of cancer. Unfortunately, most of the commercially available endometrial cancer cell lines are derived from the tumors of Asian patients. What is more, established lines that have been cultivated for a long time adapt to an artificial *in vitro* environment and lose their original phenotype due to genetic drift. Finally, each cancer patient and each disease is different and cannot be properly represented by a defined set of cell lines. Thus, we need new cancer cell lines to understand the causes of an increased predisposition to endometrial cancer among European women and to discover new effective treatments.

In this study, we present novel endometrial cancer cell lines, derived in 2023 from the tumor tissue of Lithuanian endometrial cancer patients. We characterized the cells by determining their growth rate, detecting the expression of cancer markers, analyzing colony-forming efficiency, karyotype and cell sensitivity to paclitaxel, cisplatin and carboplatin. We believe that these novel cell lines will be an effective tool for preclinical endometrial cancer studies in the future.

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