41.9%, and the frequency of the aforementioned allele amongst the control group was 34.5%.

**Conclusion:** The results of this study show that there is no statistically significant correlation between MTHFR C677T polymorphism in women with infertility of unknown cause, who are undergoing in vitro fertilization preparation, but also underline the need for further research.

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**PS121**

Comparison of Ras/Raf/MAPK signaling pathway in primary tumour and lymph node metastases – A report on an experimental study of two colorectal cancer cell lines (SW480 and SW620) and tissue samples

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**Aim:** To compare the presence of mutations in essential genes of CRC pathogenesis pathway between tissues derived from the primary tumour site and lymph node metastases.

**Introduction:** Colorectal cancer (CRC) remains the third most commonly diagnosed malignancy worldwide and a leading cause of cancer-related death. One of the pivotal pathways leading to CRC development is Ras/Raf/MAPK which is regulated by the receptor for the EGF. Mutations in these genes predict lack of response to EGFR-targeting monoclonal antibodies. However it is a common practice to assess only the primary tumour site, while mutations in metastasis may also affect the response to treatment.

**Methods:** The study was conducted on 10 patient-derived tissue samples and two ATCC human CRC cell lines obtained from the same individual: SW480 (primary tumour) and SW620 (lymph node metastasis). Cells lines were cultured according to the protocol. Genomic DNA and RNA were isolated, and PCR and RT-PCR were conducted. Primers for PCR included the following fragments: KRAS (exons 2,3,4), NRAS (exons 2,3,4), BRAF (exon 15); and for RT-PCR: KRAS, NRAS, BRAF and EGFR. Restriction enzymes were used. Proteins were extracted, purified and Western-Blot (RAS, RAF, MAPK) was performed.

**Results:** For SW480 we detected a mutation in exon 3 of NRAS gene, whereas SW620 presented a wild type. The level of Ras protein remained the same. Raf protein expression was abundant in the primary tumour site as compared to the lymph node metastasis, whereas MAPK protein presented the opposite level of expression.

**Conclusion:** The analysis of Ras-Raf-MAPK pathway may suggest that along with the tumour progression, the dominating signal is located at deeper levels of signaling pathway. Due to existing differences in key molecular points between the primary tumour and its metastases, in the era of targeted therapy, pre-treatment assessment of both sites has a potential to become a standard of care.1

**References**


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**PS122**

PI3K-Akt and Ras-Raf-MAPK signaling in colorectal cancer – Comparison of activity in primary tumor tissues and primary tumor – Derived human colorectal cancer cell lines

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