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 poly-
morphism 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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**PS114**

Assessing the oxidative modification of proteins in
inflamed placenta combined with iron
deficiency anemia in the pregnant through
histochemical method with bromophenol blue
based on Mikel Calvo

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**Aim:** To set features of OMB in the cytoplasm of decidua cells in
basal plate of the placenta at chorioamnionitis with iron deficiency
anemia in pregnant women by means of histochemical methods
combined with computer microspectrophotometry.

**Introduction:** Decidua cells are important cells to the placenta,
playing a significant role both in the physiology of pregnancy and
during inflammation. The processes of oxidative modification of
proteins (OMB) in inflammation are associated with increased levels
of oxygen free radicals, which alter the properties of these
macromolecules while oxidizing amino groups of proteins. Anemic
condition is accompanied by intensification of free radical pro-
cesses in the blood and tissues, and iron deficiency additionally
significantly modifies these processes.

**Methods:** 125 studied placentas, to compare the studied placen-
tal physiology of pregnancy and monitoring iron deficiency anemia
without inflammation.

A histochemical reaction of bromophenol blue for “acidic” and
“basic” proteins by Mikel Calvo was set in histological sections 5 μm
thick.

Delta Optical Evolution 100 and Olympus SP-550UZ were used
to obtain a digital copy of the image. Ratio R/B, which is the ratio
between the amino and carboxyl groups in proteins, was deter-
mined by “ImageJ”.

Unpaired Student’s test calculated arithmetic mean and its error.

**Results:** When assessing visual histochemical preparations
decidua cells are clearly stained, that is suitable for quantitative
research, cell boundaries are defined through cell membrane
coloring and contrasting color around decidua cells fibrinoid. Nuclei
and nucleoli were visualized fairly well. “Basic” proteins prevailed
in nucleoplasm, while “sour” in the nucleolus.

The decidua cells' cytoplasmic specific color has been mostly gran-
ular in nature, and spectral characteristics and optical density of
color varied greatly.

Factor R/B at physiological pregnancy (n = 20) was – 1.04 ± 0.008
and in iron deficiency anemia (N = 21) – 1.06 ± 0.009 P > 0.05.
In acute chorioamnionitis (n = 23) – 1.08 ± 0.009, and combined with
iron deficiency anemia (N = 21) – 1.09 ± 0.009 P > 0.05. Regarding
chronic chorioamnionitis (n = 20) ratio – 1.24 ± 0.011, and com-
bined with iron deficiency anemia (N = 21) – 1.64 ± 0.016 P < 0.001.

**Conclusion:** Conclusion. The intensity of OMB increases only
in chronic form of chorioamnionitis in the decidua cells cytoplasm,
and combined with iron deficiency anemia significant performance
increase has been observed.

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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 tis-
sue samples and two ATCC human CRC cell lines obtained from the
same individual: SW480 (primary tumour) and SW620 (lymph
node metastasis). Cell lines were cultured according to the proto-
col. 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. Pro-
teins 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 pro-
tein 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 sug-
gest 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
practice.

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**PS122**

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

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