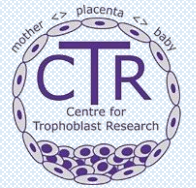




Department of Genetics, Cell- and Immunobiology
Semmelweis University, Faculty of Medicine



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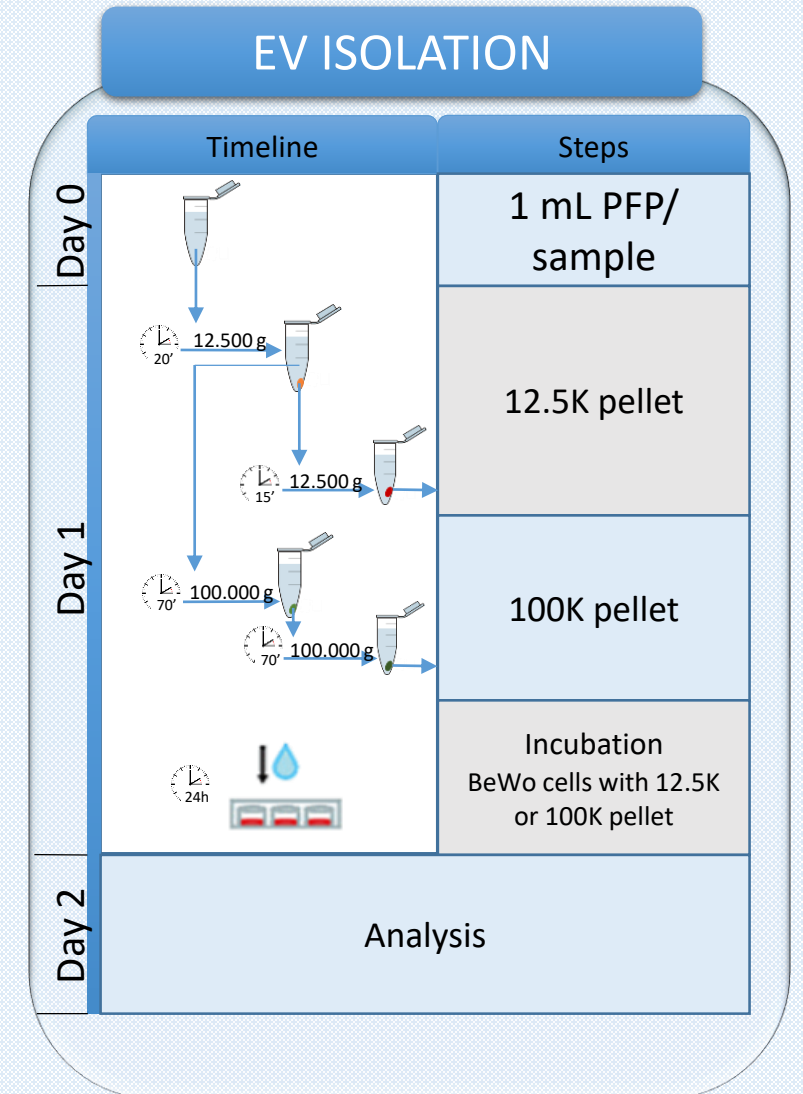
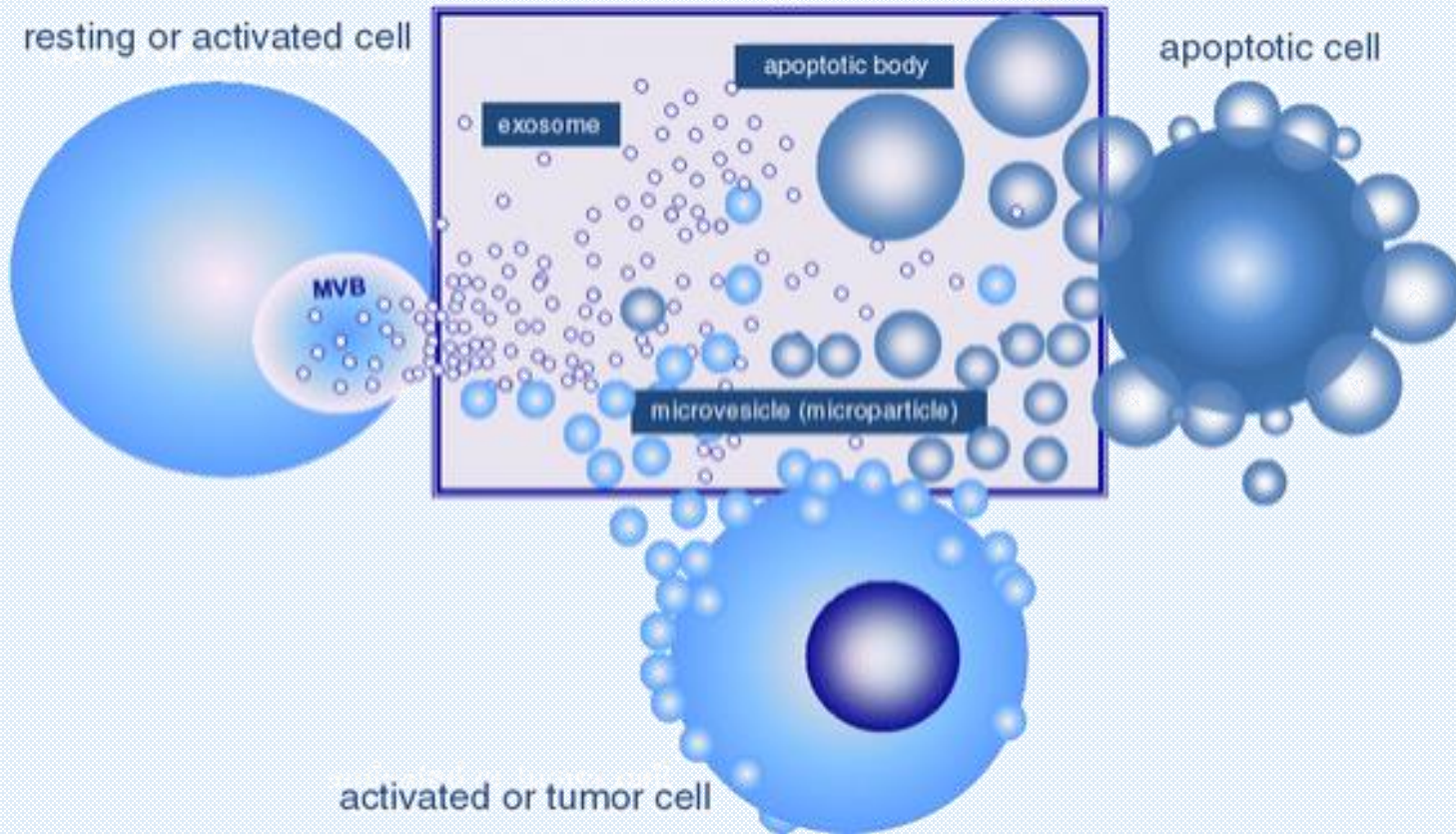
In vitro analysis of the effects of pregnancy associated circulating extracellular vesicles on BeWo cells

Árpád Ferenc Kovács¹, Orsolya Láng¹, László Kőhidai¹, János Rigó², Nóra Fekete¹, Edit Buzás¹, Éva Pállinger¹

¹Department of Genetics, Cell- and Immunobiology, Semmelweis University, Budapest; ²1st Department of Obstetrics and Gynaecology, Semmelweis University, Budapest, Hungary

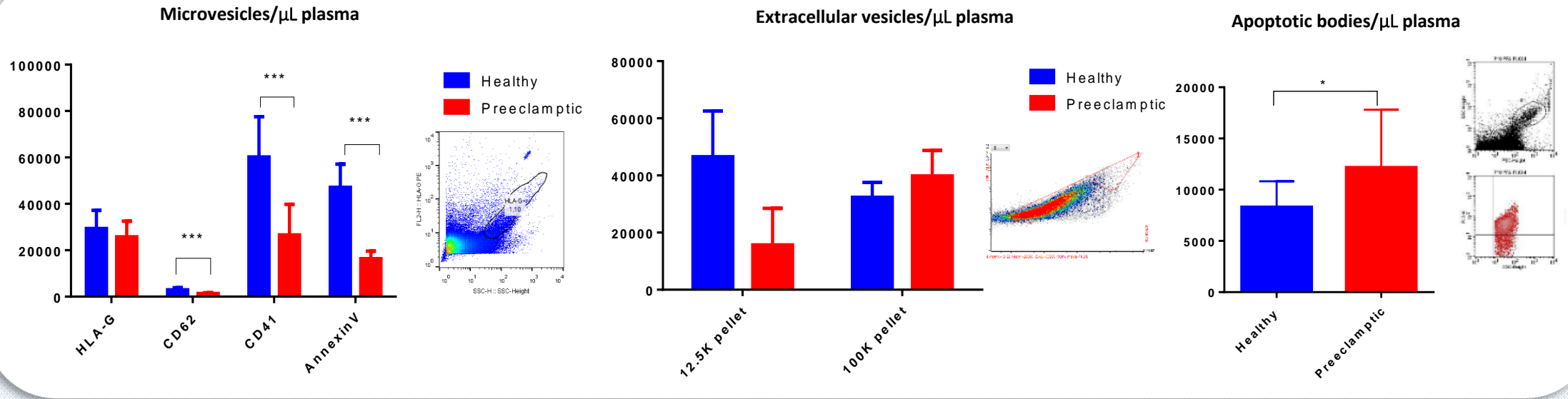
2016. 07. 11

Extracellular vesicles (EV)

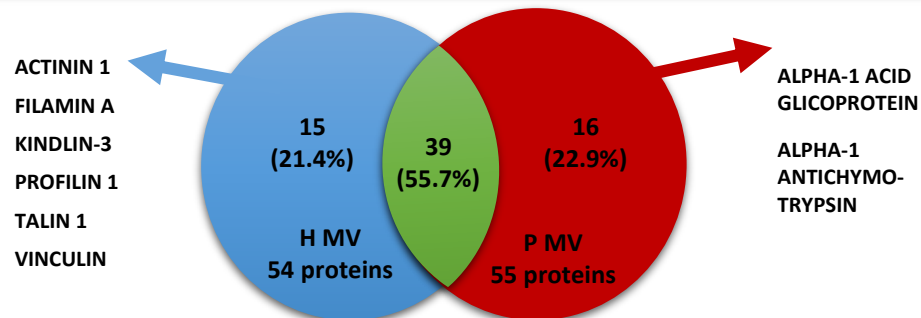


Circulating EV pattern

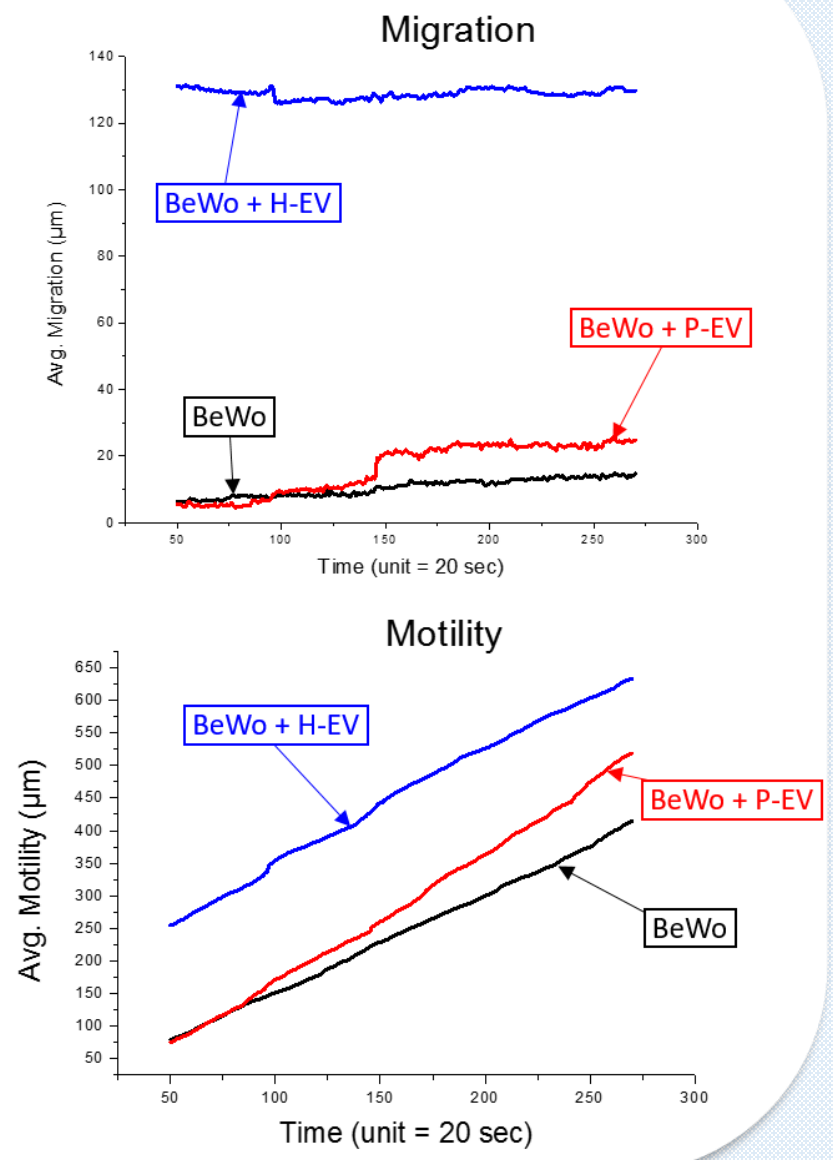
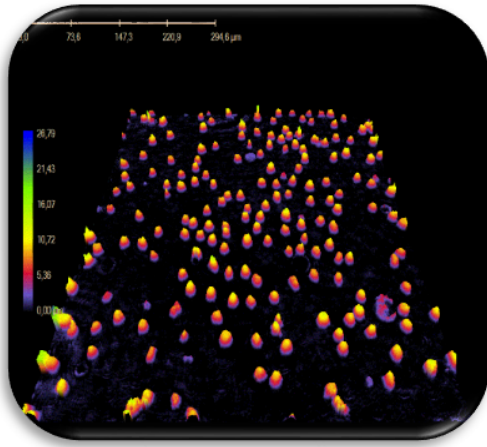
DIFFERENT CIRCULATING EV PATTERN IN PREECLAMPSIA ASSOCIATED-EV



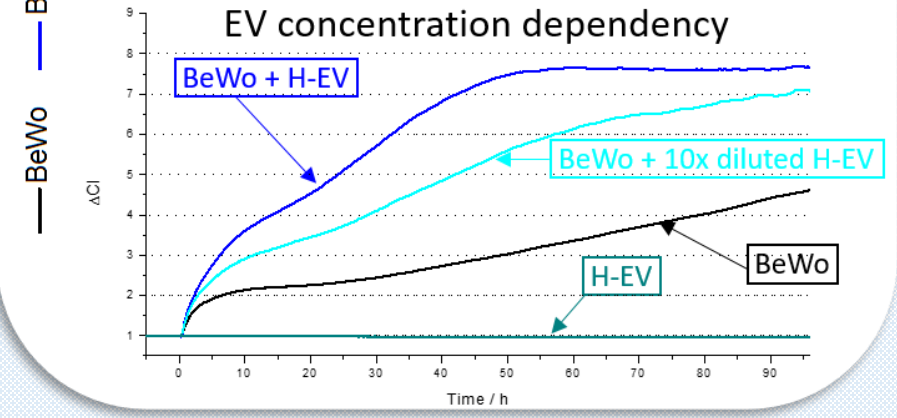
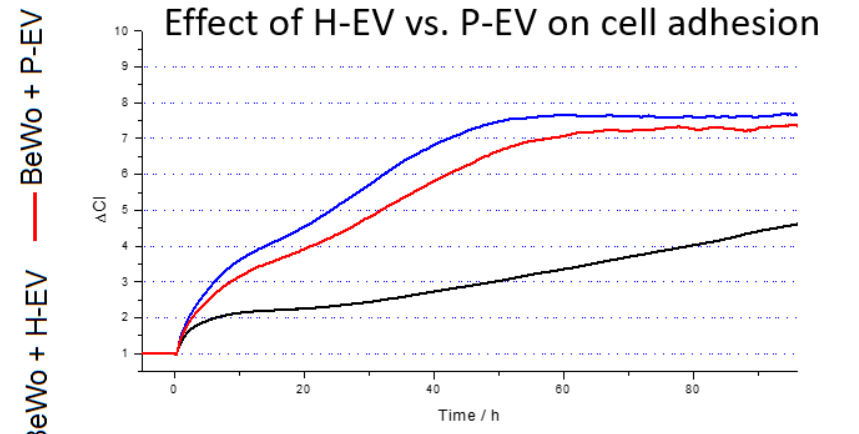
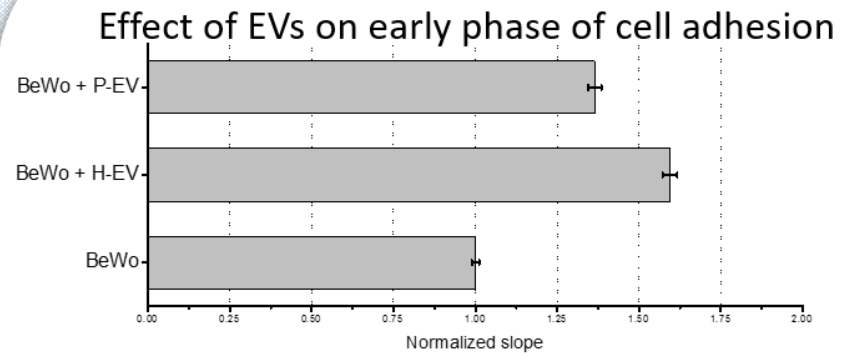
MASS SPECTROMETRY REVEALS DIFFERENT P-EV CARGO



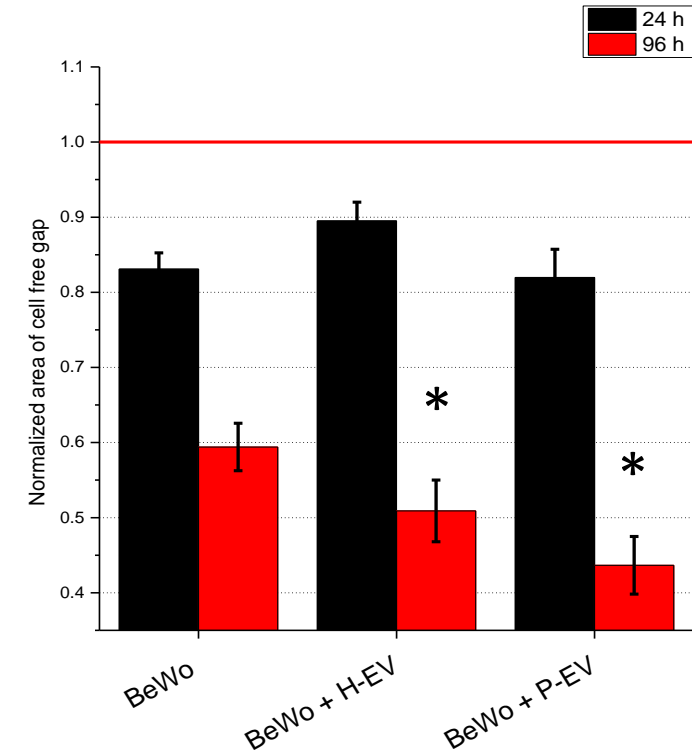
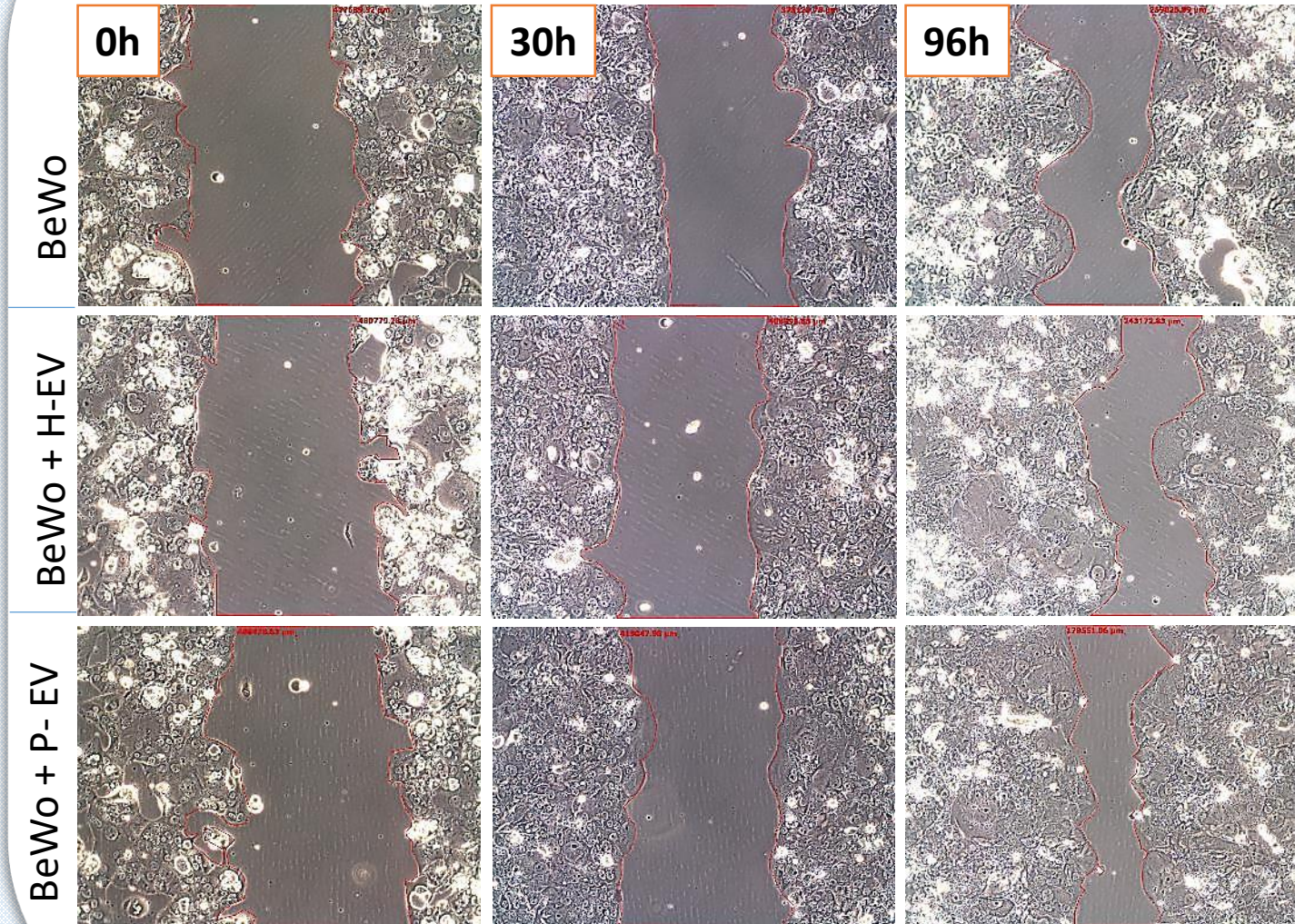
P-EV INDUCED DAMPENED CELL MIGRATION AND MOTILITY



SLOWER ADHESION KINETICS UPON P-EV TREATMENT



WOUND HEALING ASSAY – INCREASED INVASIVENESS INDUCED BY P-EV

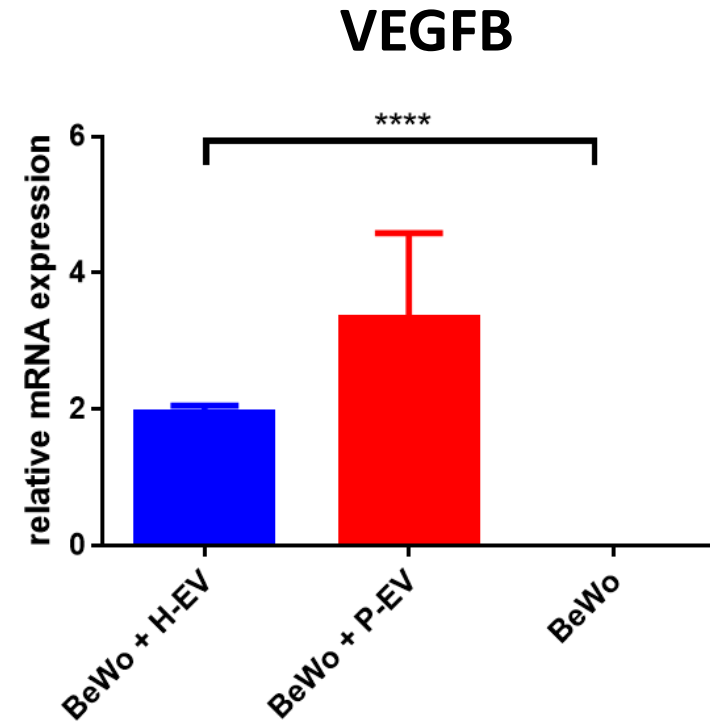
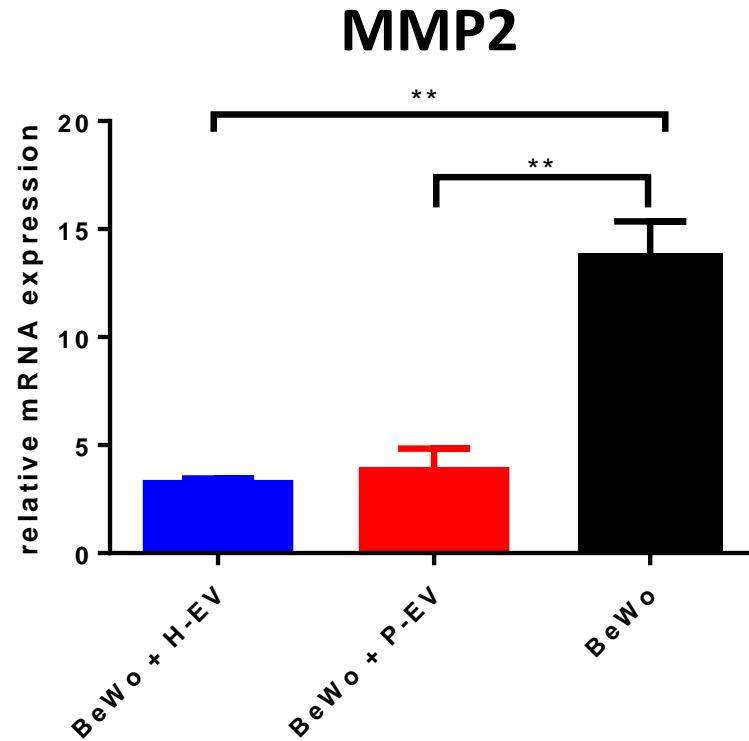


A wound healing assay with ibidi culture insert was carried out to measure the EV-mediated effects upon the invasiveness of BeWo cells.

EV INDUCED GENE EXPRESSION

Relative mRNA levels after 24h incubation with EVs

Gene	HP MV treated BeWo	PE MV treated BeWo
CD44	Grey	Grey
CD82	Grey	Grey
CLDN1	Red	Red
CXCR4	Black	Black
ICAM1	Black	Black
MMP2	Green	Green
MMP7	Grey	Grey
MMP9	Black	Black
MMP11	Black	Black
TGFB1	Black	Red
VCAM1	Grey	Grey
VDR	Black	Black
VEGFA	Black	Green
VEGFB	Red	Red
VEGFC	Black	Black



Expression levels compared to non-treated BeWo cells

- Higher (>1.5x fold)
- Lower (<0.5x fold)
- Same
- No expression

Conclusion

We identified circulating EV pattern modified qualitatively and quantitatively in preeclampsia (increased ratio of apoptotic bodies).

Circulating P-EVs elicit a different functional pattern of cellular responses in BeWo cells, which is reflected by:

1. Dampened cell migration and motility
2. Slower adhesion kinetics
3. Increased collective cell migration
4. Altered gene expression pattern (increased VEGFB, TGFB1, decreased MMP2)

Consequently, circulating pregnancy-associated EVs may influence the invasion of trophoblast cells.

Thank you for your attention!

