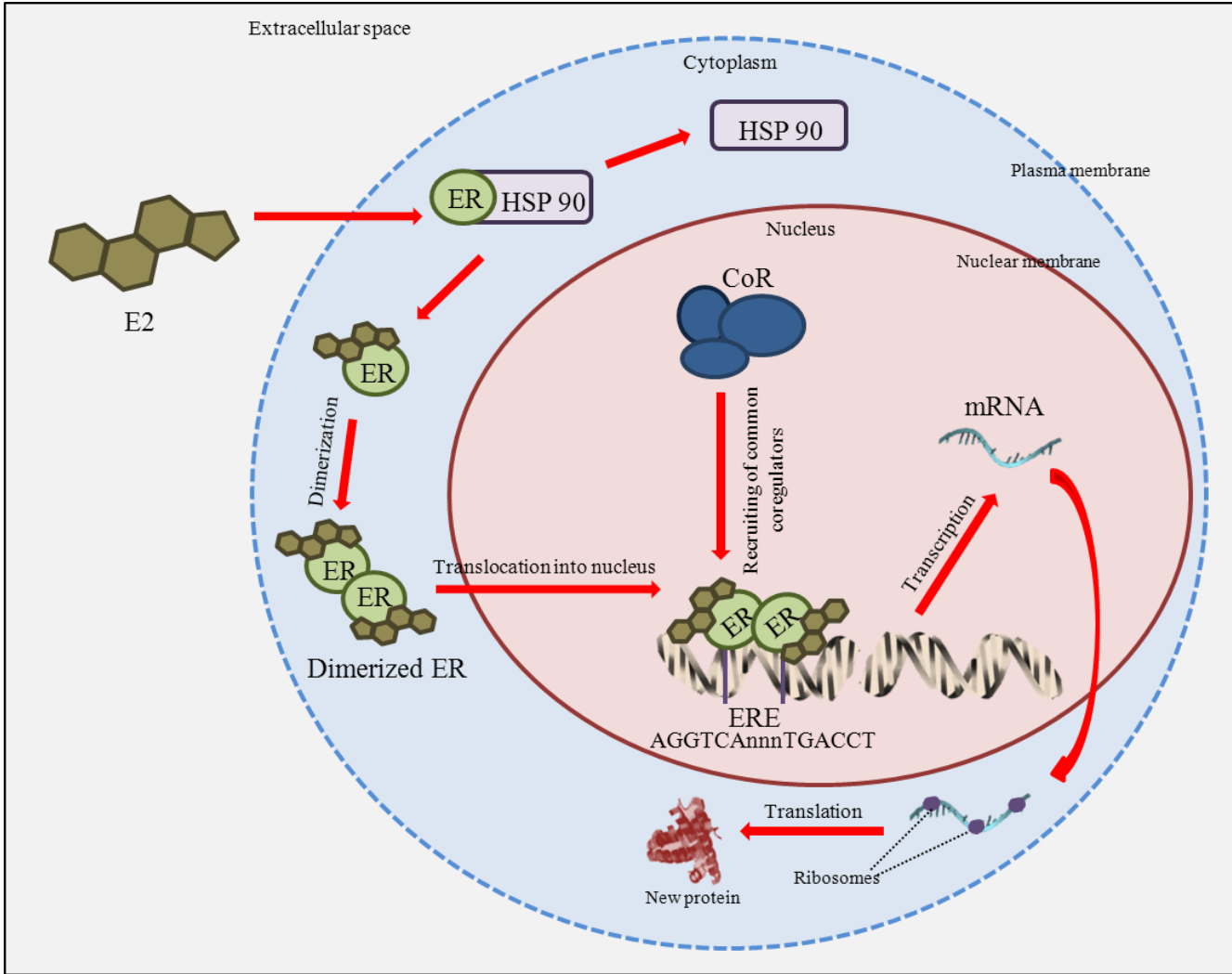
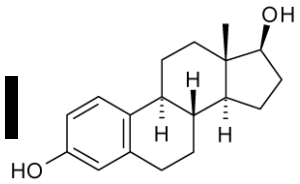


Název: **Antisense oligonucleotides towards estrogen receptor proteins of breast tumor cells**

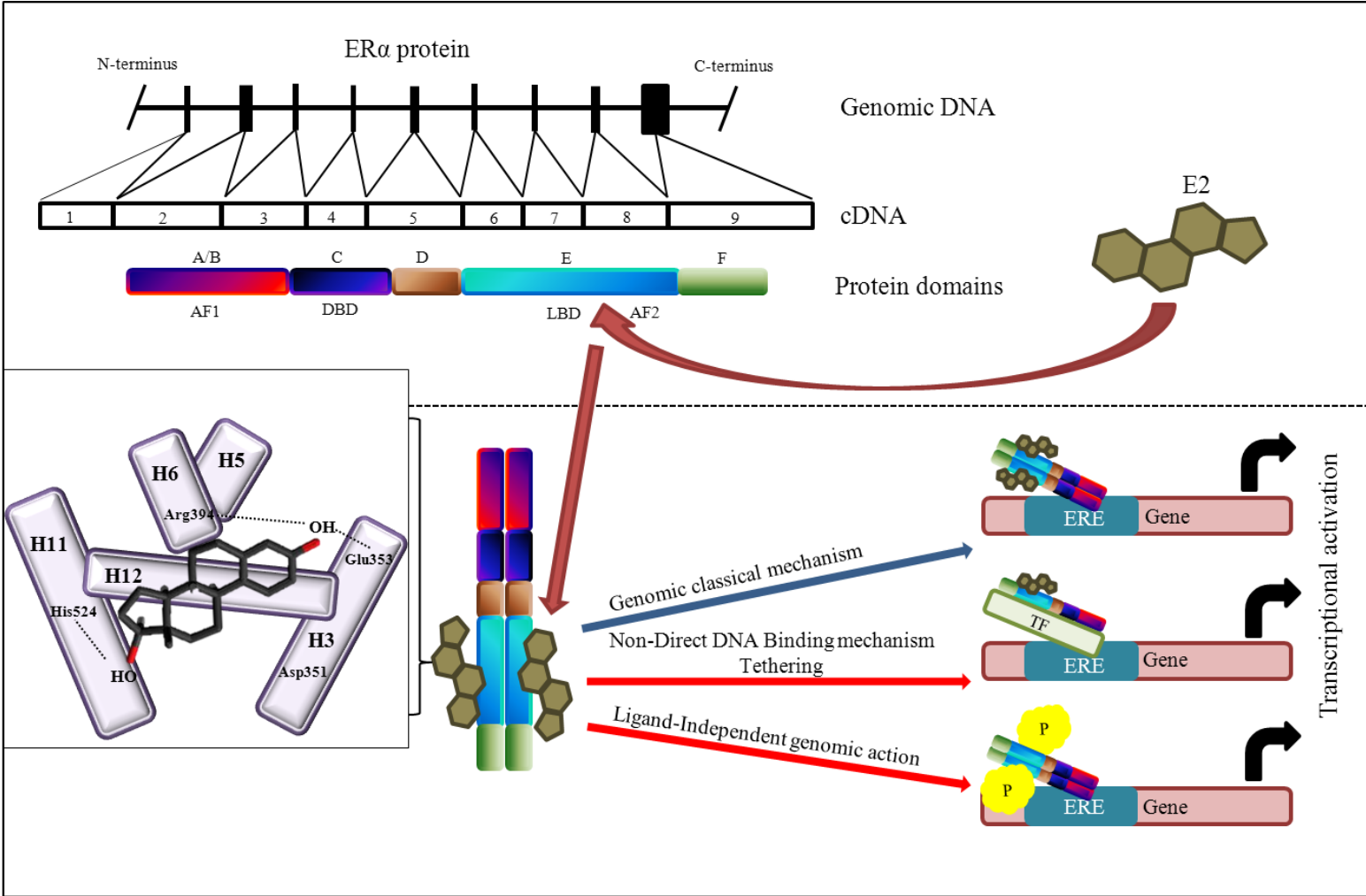
Školitel: Zbyněk Heger

Datum: 23. 1. 2014

β -estradiol



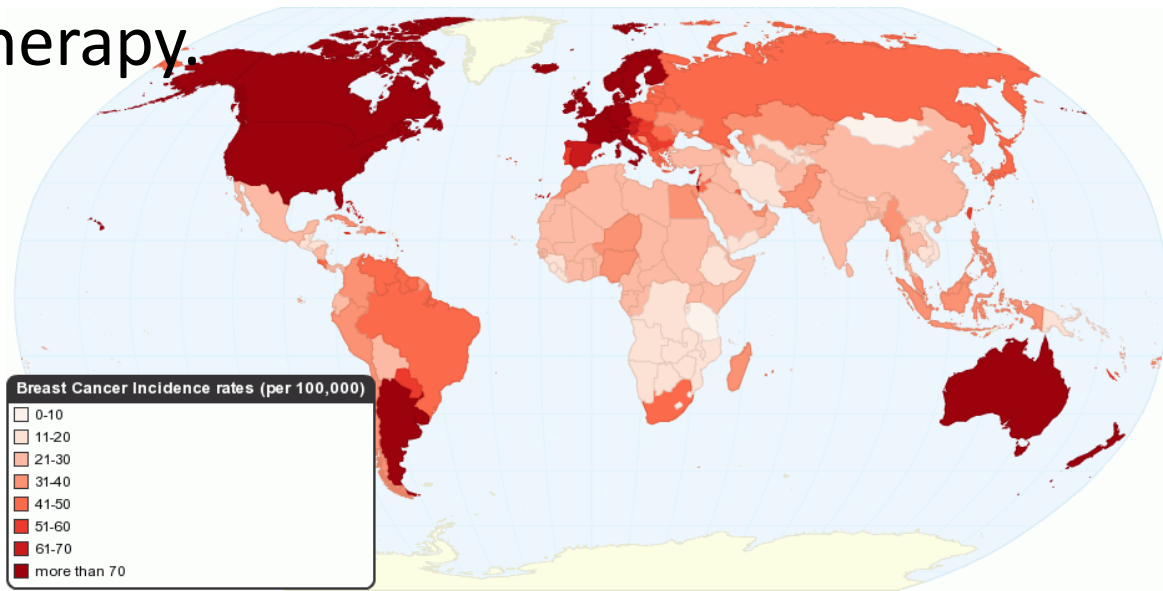
β-estradiol



Aims and Hypotheses

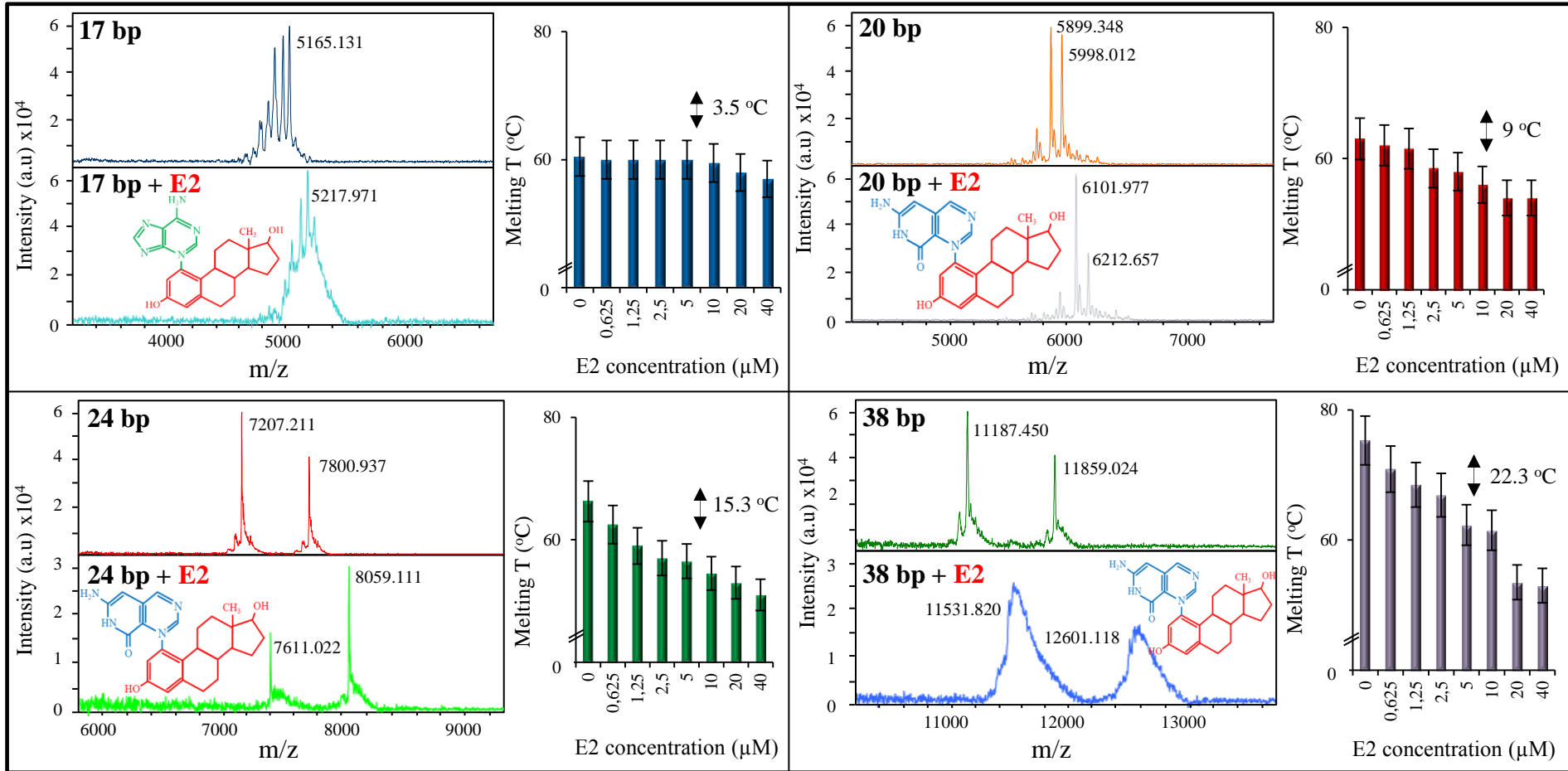
4

- *In vitro* interaction of estradiol with DNA (miRNA, siRNA?) as a potential carcinoma initiator.
- Adducts formation?
- Construction of estradiol-based liposome applicable in breast tumor gene therapy.



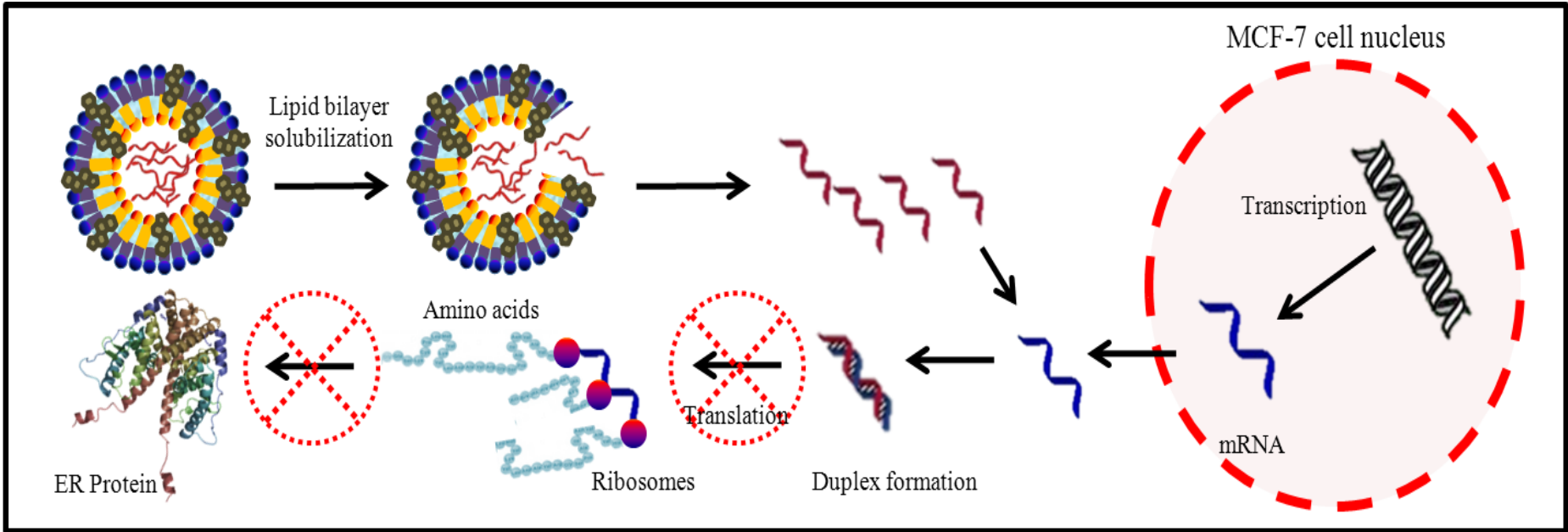
In vitro interactions

5



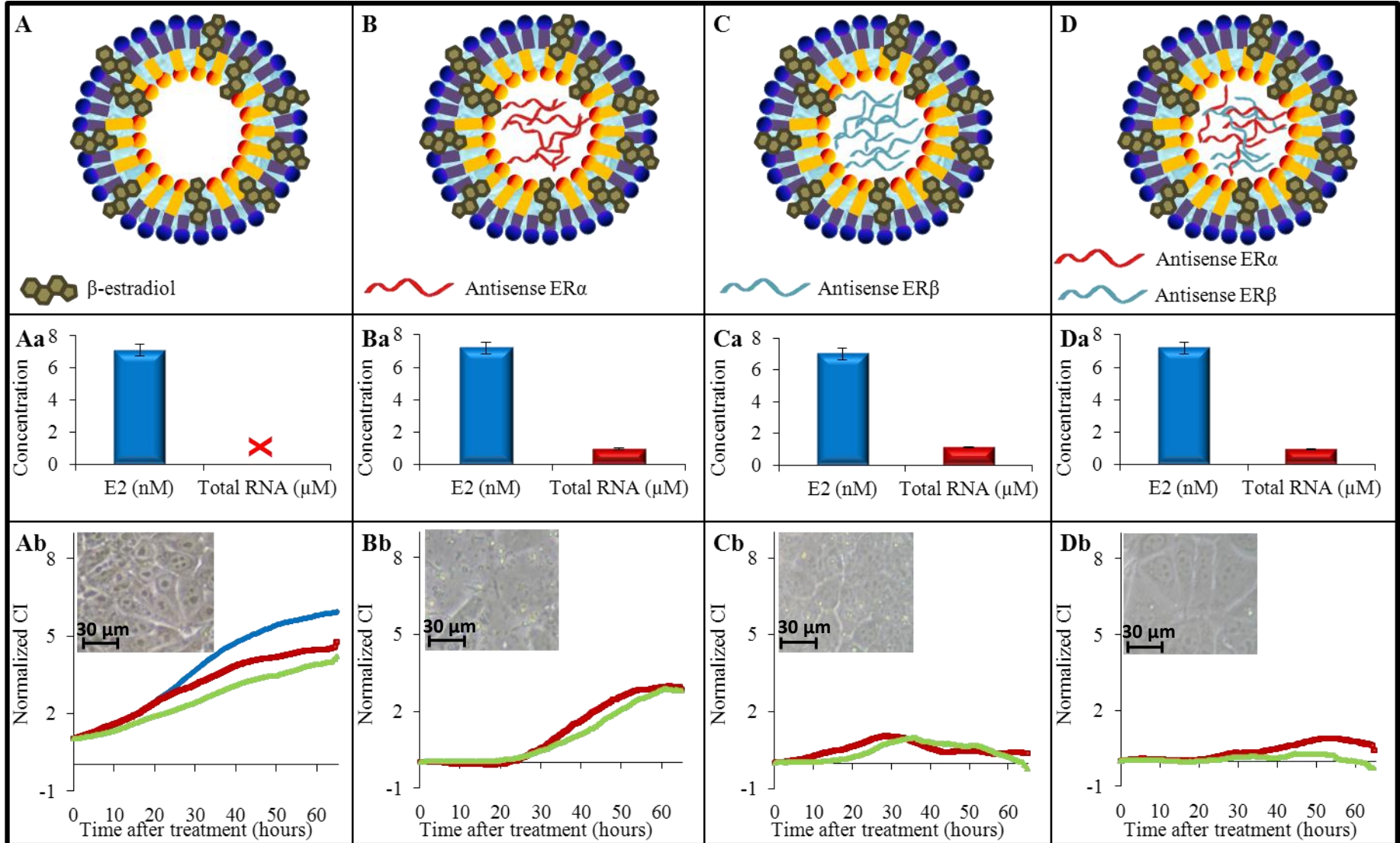
Antisense therapy mechanism

6



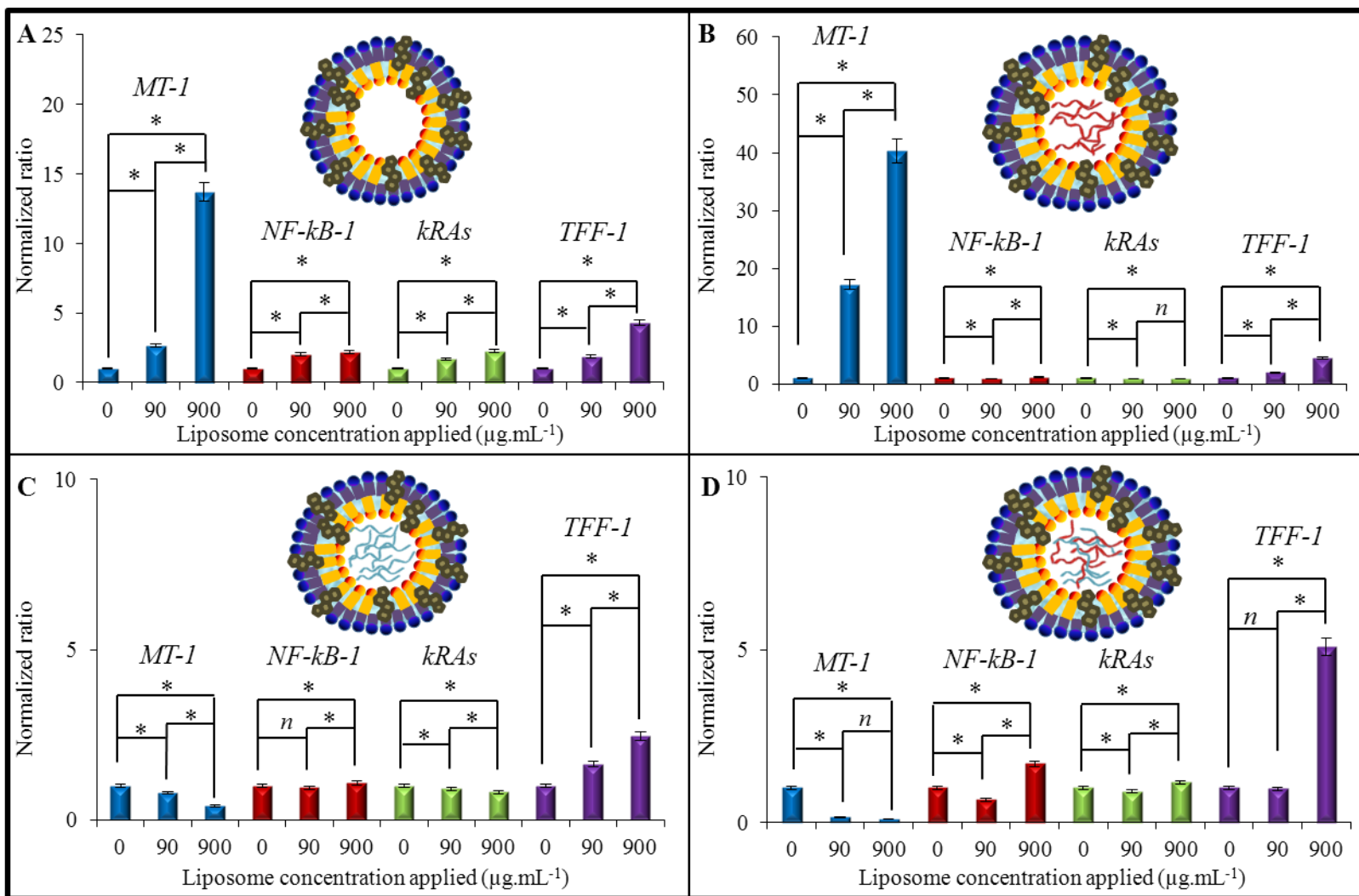
Liposomes construction and application

7



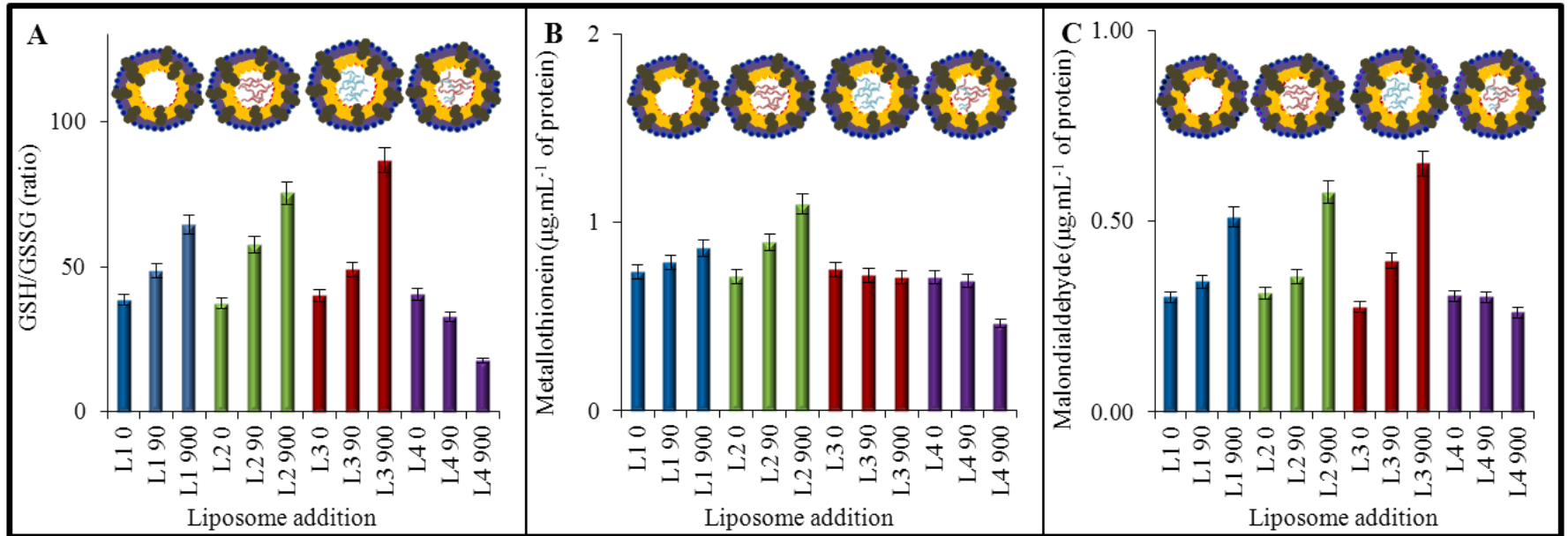
Gene expression

8



Oxidative stress markers

9



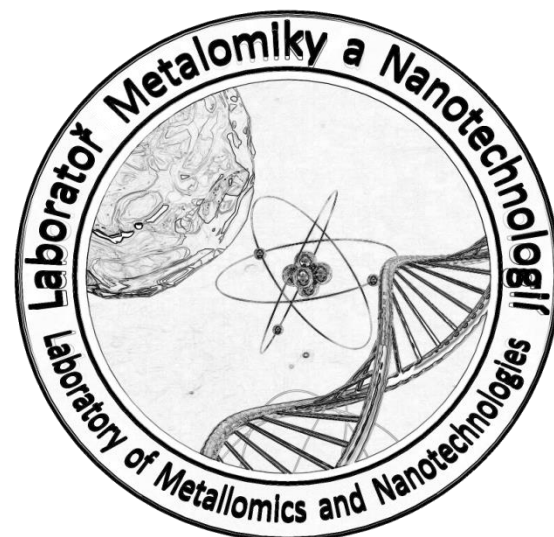
Conclusion

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- Direct interaction between nucleic acids and increased concentrations of estradiol (contraceptives) may be one of the breast tumorigenesis initiators (A and G adducts).
- ER β was shown to play major role in breast cancer treatment, but synergic effect of both antisense sequences exhibited the largest effect.
- In the future our estradiol based liposome may be one of the possible way of ER+ breast tumors treatment.

Acknowledgment

10



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Thank you for your attention



Reg.č.projektu: CZ.1.07/2.4.00/31.0023

Název projektu: Partnerská síť centra excelentního bionanotechnologického výzkumu