

ÁRPÁD SZÖÖR



University of Debrecen
Faculty of Medicine
Department of Biophysics and Cell Biology

Address: Egyetem tér 1., H-4032 Debrecen, Hungary,
Life Science Building

RESEARCH AREA

I am working on developing new generational immune and stem cell therapeutics against various types of solid tumors. Previously, I investigated the effectiveness of chimeric antigen receptor (CAR) expressing and/or bispecific T cell activating molecule (BiTE) secreting T, NK and mesenchymal stem cells on different solid tumor and leukemia models. In my current research, I am investigating and optimizing CAR and UniCAR expressing T cells that recognize the HER2 tumor-specific antigen, as well as CAR NK-92 cell lines in solid tumor models. In addition to these, I am investigating the therapeutic efficacy of the autoantigen recognizing domain expressing CAAR T cells in a murine scleroderma model.

TECHNIQUES AVAILABLE IN THE LAB

In our experiments, we generate genetically modified CAR T lymphocytes or NK cells using a retro- or lentiviral transduction system. After that, we examine their therapeutic efficacy in in vitro coculture experiments. We perform ELISA assays and luminescence detection based cytotoxicity assays. Finally, the in vitro results are confirmed in in vivo animal models.

SELECTED PUBLICATIONS

Csaplár, M., Szöllősi, J., Gottschalk, S., Vereb, G., **Szöör, Á.** (2021) Cytolytic Activity of CAR T Cells and Maintenance of Their CD4+ Subset Is Critical for Optimal Antitumor Activity in Preclinical Solid Tumor Models. **Cancers (Basel) 17:** 4301.

Szöör, Á., Szöllősi, J., Vereb, G. (2021) From antibodies to living drugs: quo vadis cancer immunotherapy? **Biol Futura 72:** 85-99.

Tóth, G., Szöllősi, J., Abken, H., Vereb, G., **Szöör, Á.** (2020) A Small Number of HER2 Redirected CAR T Cells Significantly Improves Immune Response of Adoptively Transferred Mouse Lymphocytes against Human Breast Cancer Xenografts. **Int J Mol Sci 21:** 1039.

Szöör, Á., Tóth, G., Zsebik, B., Szabó, V., Eshhar, Z., Abken, H., Vereb, G. (2020) Trastuzumab Derived HER2-specific CARs for the Treatment of Trastuzumab-Resistant Breast Cancer: CAR T Cells Penetrate and Eradicate Tumors That Are Not Accessible to Antibodies. **Cancer Lett 484:** 1-8.

Szöör, Á., Vaidya, A., Velasquez, M., Mei, Z., Galvan, D., Torres, D., Gee, A., Heczey, A., Gottschalk, S. (2017) T Cell-Activating Mesenchymal Stem Cells as a Biotherapeutic for HCC. **Mol Ther Oncolytics 6:** 69-79.