

Development of Lead compound of personalized therapeutic mRNA cancer vaccine by predicting the binding of tumor-reactive T cells and neoantigens



ONCOLOGY	Hit
Product Type	Personalized Cancer Vaccine
Indication	Solid Tumor
Target	Tumor specific neoantigens predicted by a GENINUS platform based on binding affinity between TCR and pMHC
MoA(Mechanism of Action)	<ol style="list-style-type: none"> 1) Targeting of tumor reactive TILs (tumor infiltrating lymphocytes) 2) Prediction of epitope binding target cells by GENINUS platform 3) Activation of immune cells in lymphoid organ after vaccination of predicted neoantigen 4) Infiltration of neoantigen specific immune cells into tumor 5) anti-tumor responses 6) immune activation by antigen spreading from eliminated tumor cells
Competitiveness	Our GENINUS platform, patented on 0621, 2023 (# 10-2023-0079811) enables the identification of potent neoantigens via structural binding prediction of TCR-pMHC. We analyze tumor-reactive TILs in the patient's tumor tissue using single-cell analysis and predict the binding of tumor cells pMHC with analyzed TCR sequences. We focus on MHC class I epitopes to pinpoint neoantigens that are specifically recognized by CD8 T cells, which are accountable for eliminating tumor cells.
Development Stage	Hit
Route of Administration	Parenteral-intravenous