TUMOR TARGETED, ADIPOSE-DERIVED HUMAN MAST CELLS HAVE ANTI-TUMOR EFFECTS IN VIVO AFTER INTRAVENOUS INJECTION

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Background The use of one’s own cells to treat tumors is typified by chimeric antigen receptor T cells (CAR T) therapy yet cells with anti-tumor properties being investigated continues to grow. We have previously proposed a new strategy using tumor-targeted mast cells (MC) obtained from autologous sources and demonstrated proof-of-concept previously in vitro and in vivo.1-4

Methods A human HER2/neu-specific IgE was used to arm human adipose-derived MC (ADMC) through the high affinity IgE receptor (FceRI) and intravenously (i.v.) injected into HER2/neu human tumor-cell bearing immunocompromised mice.

Results It is shown for the first time that HER2/neu IgE-sensitized MC injected i.v. target and inhibit HER2/neu-positive tumors.

Conclusions These studies provide further proof of concept that MC have anti-tumor properties and could possibly provide another strategy for developing adoptive cell transfer therapeutics for patients.

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