

[Open Peer Review on Qeios](#)

Alpha-1,3-galactosyltransferase-expressing Allogeneic Renal Cell Carcinoma Vaccine

National Cancer Institute

Source

National Cancer Institute. *Alpha-1,3-galactosyltransferase-expressing Allogeneic Renal Cell Carcinoma Vaccine*. NCI Thesaurus. Code C113647.

An allogeneic renal cell cancer (RCC) vaccine composed of cell line-derived RCCs that are genetically engineered to express the murine alpha-1,3-galactosyltransferase (GalT), with potential immunostimulatory and antineoplastic activities. Not naturally occurring in humans, GalT catalyzes the expression of foreign alpha-1,3-galactosyl (alpha-gal) carbohydrate epitopes on the cell membranes of the allogeneic RCCs present in the vaccine. This induces a hyperacute rejection reaction involving pre-existing human anti-alpha-gal antibodies, which bind to the foreign alpha-gal epitopes expressed by the allogeneic RCCs. This results in complement-mediated cytotoxicity (CMC) and antibody-dependent cell-mediated cytotoxicity (ADCC) towards endogenous RCCs with unmodified carbohydrate epitopes.