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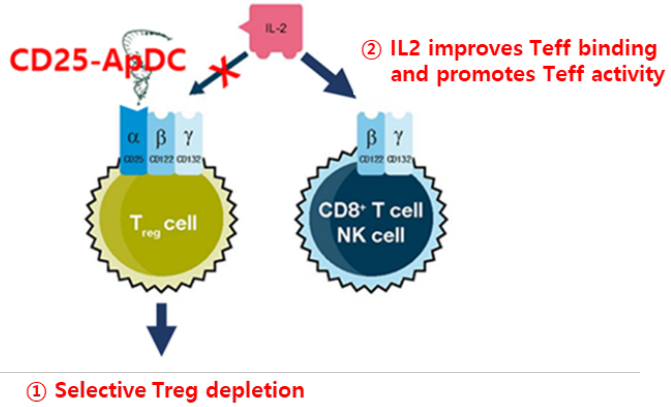
A study on the leading optimization for cancer immunotherapy of regulatory T cell suppression/depletion mechanism using CD25-ApDC (CD25 aptamer-drug-conjugate)

APTAMER SCIENCES, Inc.

ONCOLOGY | **Lead**

Product Type	Aptamer-Drug conjugate (ApDC)
Indication	Solid tumor
Target	CD25 (Regulatory T cell)
MoA(Mechanism of Action)	- CD25-targeted aptamer blocks IL-2 signaling in regulatory T cells (Tregs) while it is not blocking the IL-2/IL-2R interaction in effector T cells (Teffs). - CD25-targeted aptamer-drug conjugate (CD25-ApDC) leads to increase Teffs and APC activity in the tumor by selectively depleting Tregs. - Selective down-regulation and depletion of Treg which is a key immunosuppressive agent can improve overall immune response in the tumor. 
Competitiveness	- CD25-targeted aptamer blocks IL-2 signaling in regulatory T cells (Tregs) while it is not blocking the IL-2/IL-2R interaction in effector T cells (Teffs) - CD25-ApDC is a selective CD25 Treg depleter resulting in the increase of Teff/ Treg ratio in the tumor. - CD25-specific aptamer inhibits the immunosuppressive activity of Treg by blocking IL-2 binding and downstream signaling, resulting in the decrease of TGF-beta secretion. - Relatively shorter half-life, rapid clearance, superior tissue permeability of an aptamer compared to an antibody enable the effective removal of Tregs in the tumor with minimizing systemic target-related adverse effects such as autoimmunity due to long-term depletion of Treg.
Development Stage	Lead
Route of Administration	intravenous injection (IV)

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KDDF Korea Drug Development Fund