A Fully Human anti-VISTA Antibody as a Promising Therapy Against Poorly Immunogenic Tumors

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Background

- VISTA (B7 domain in suppression of T cell activation) is a unique B7 family member expressed on myeloid cells, monocytes, NK cells and Treg.
- VISTA is highly expressed on MDSC and Treg in the TME and play an important role in immunosuppression.
- VISTA is a negative regulator that directly suppresses T cell activation and proliferation.
- High VISTA expression correlates with poor survival in cancer patients.
- VISTA is a unique immune checkpoint inhibitor for tumor immunotherapy.

Objectives

- Screen for specific fully human anti-VISTA antibodies.
- Evaluate and select an antagonistic anti-VISTA antibody (KVA) as clinical candidate from in vitro and in vivo studies.
- Characterize KVA12.2, our lead antibody for IND submission.

Results

Kineta’s Anti-VISTA Antibodies (KVA) Bind to Cell-Surface Human and Monkey VISTA

KVA Antibodies Bind Only To VISTA and Not Other B7 Family Proteins

KVA Antibodies Enhance T cell Activation in SEB activation assay

Conclusion

- 107 fully human ScFv anti-VISTA antibodies were generated and analyzed.
- Kineta’s anti-VISTA lead antibody is highly specific.
- Kineta’s anti-VISTA lead antibody activates monocytes, and this activation is NK dependent.
- Kineta’s anti-VISTA lead antibody reverse MDSC suppression of T cells.
- Kineta’s anti-human VISTA lead antibody induces strong anti-tumor response as a single agent or in combo-therapies with anti-PD-1 or anti-CTLA4 in different hard to treat tumor models.
- KVA 12.2 is our lead antibody for IND enabling studies.