SIRPαFc, a CD47-Blocking Cancer Immunotherapeutic, Sensitizes Malignant B Cells to Macrophage-Mediated Destruction

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Introduction
- CD47 binds to SIRPs on the surface of macrophages and delivers a "do not eat" signal to suppress phagocytosis
- Tumor cells frequently overexpress CD47 and exploit this pathway to evade macrophage-mediated destruction
- Blocking CD47 using a soluble decoy receptor (SIRPαFc) has emerged as a promising strategy to neutralize the suppressive effects of CD47 and promote the eradication of tumor cells
- In this study we have examined the effects of SIRPαFc on malignant human B cells both in vitro and in vivo

SIRPαFc: A Novel Biologic that Blocks the CD47 "Do Not Eat" Signal

SIRPαFc Exhibits Strong Binding to a Panel of Human B Cell Tumors

SIRPαFc Enhances Macrophage-Mediated Phagocytosis of Malignant Human B cells

Phagocytosis Index = number of tumor cells engulfed per 100 macrophages. *p < 0.05, **p < 0.01, ***p < 0.001

Conclusions
- SIRPαFc blocks CD47 with nanomolar affinity
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- Tumor cells frequently overexpress CD47 and exploit this pathway to evade macrophage-mediated destruction
- Blocking CD47 using a soluble decoy receptor (SIRPαFc) has emerged as a promising strategy to neutralize the suppressive effects of CD47 and promote the eradication of tumor cells
- In this study we have examined the effects of SIRPαFc on malignant human B cells both in vitro and in vivo
- SIRPαFc potently triggers macrophage-mediated phagocytosis of malignant B cells

SIRPαFc is Efficacious in B Lymphoma Xenograft Models

Burkitt’s Lymphoma (Raji, CD20+)

Burkitt’s Lymphoma (Namalwa, CD20+)

Harrisonite-NOO.5CD (SHN+)- mice were implanted subcutaneously with tumor cells and dosed (IP) with murine SIRPαFc (10 mg/kg), control Fc (6.67 mg/kg) or Rituximab (8 mg/kg) as indicated

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