



Urology Research Lab

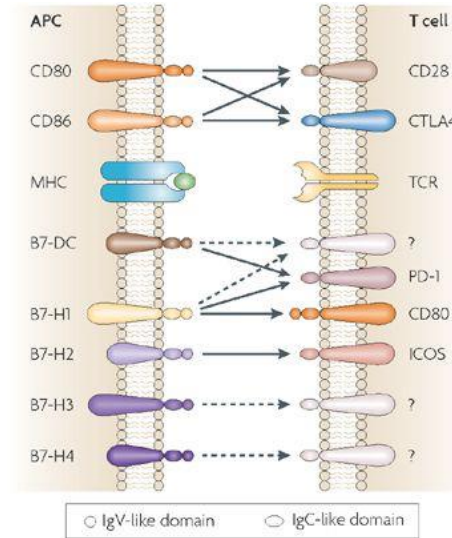
# Blockade of the Immune Checkpoint B7-H3 Sensitizes Rhabdomyosarcoma to Anti-Tumor Immune Response

Roxane R.Lavoie, Fabrice Lucien-Matteoni, Vidhu Joshi, Haidong Dong, Patricio Gargollo and Candace Granberg

# Rhabdomyosarcoma

- Rhabdomyosarcoma (RMS) is the most common soft tissue sarcoma in children
- 350 new cases diagnosed in the US each year
- Standard of care (multimodal therapy)
  - Vincristine, actinomycin D and cyclophosphamide
  - Radiotherapy
  - Surgery

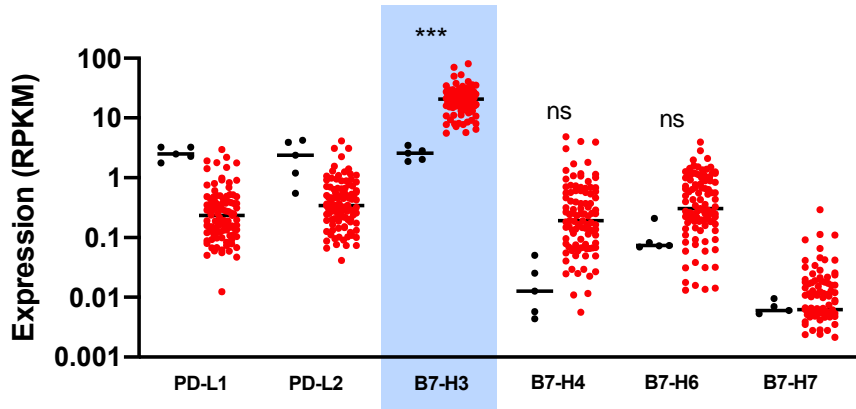
# Immunotherapy : a viable therapy for pediatric RMS?



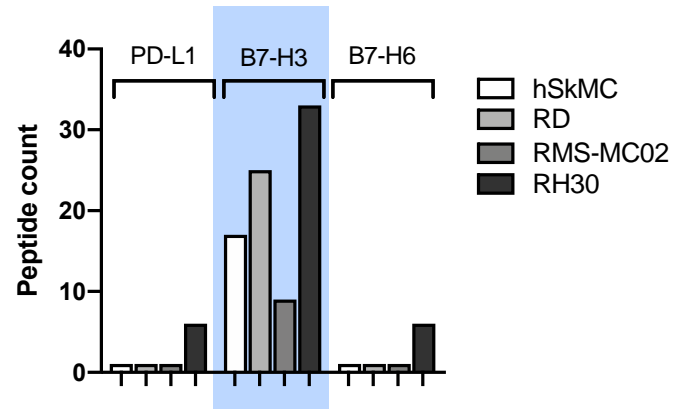
Nature Reviews | Immunology

# The immune checkpoint B7-H3 is upregulated in RMS

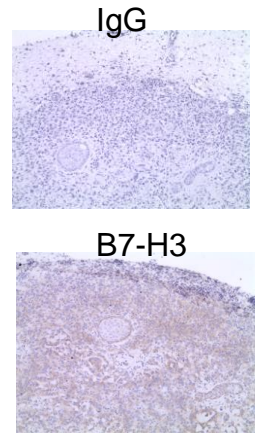
RNA expression  
GSE108022



Proteomic profiling



RMS  
tumor xenograft

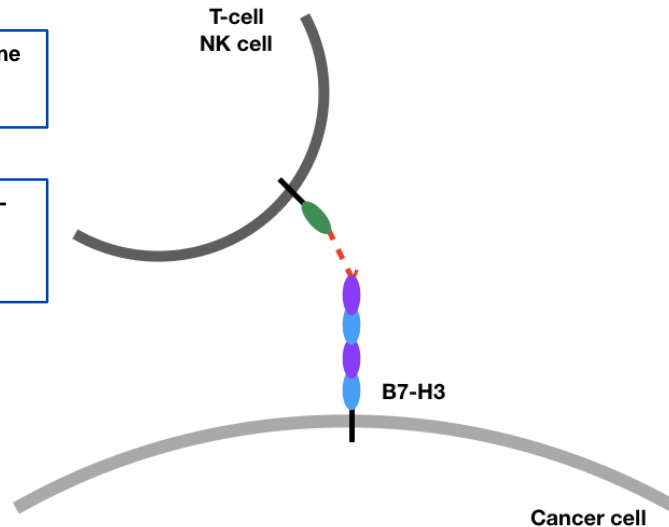


# B7-H3 ... Beyond Immune Regulation!

## Immunological role

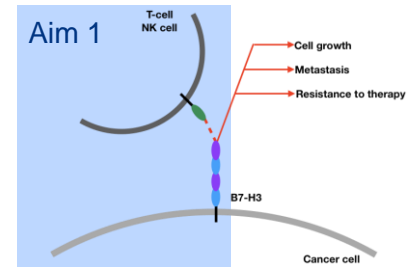
Lee, Y. H. *et al.* (2017) **Inhibition of the B7-H3 immune checkpoint limits tumor growth by enhancing cytotoxic lymphocyte function.** *Cell Res.*

Majzner R. G. *et al.* (2019) **CAR T Cells Targeting B7-H3, a Pan-Cancer Antigen, Demonstrate Potent Preclinical Activity Against Pediatric Solid Tumors and Brain Tumors.** *Clin. Cancer Res.*

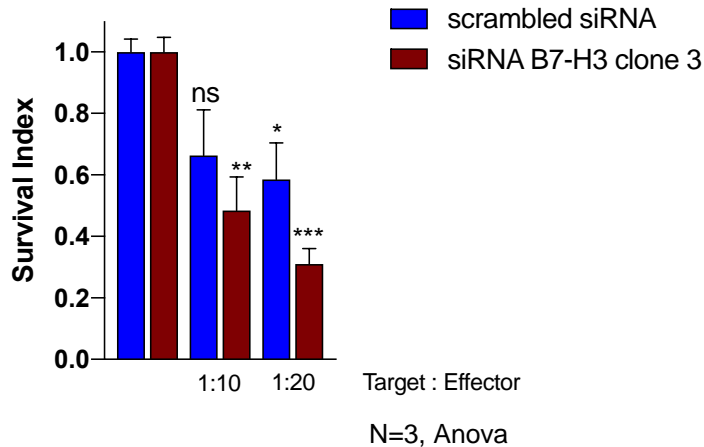


Investigate the therapeutic potential of targeting B7-H3 in pediatric RMS

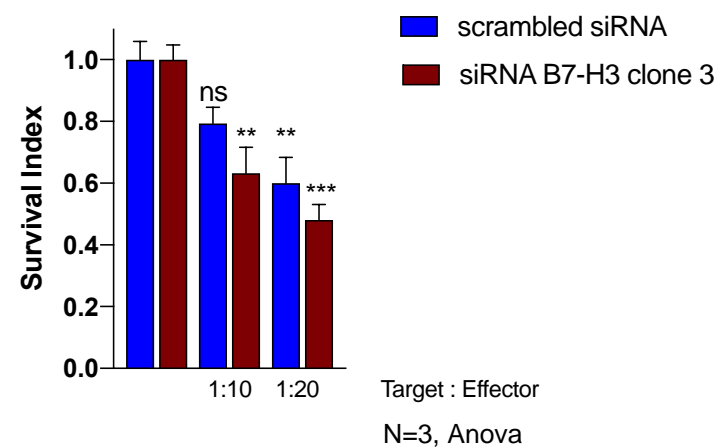
# B7-H3 knockdown improves anti-tumor immune response



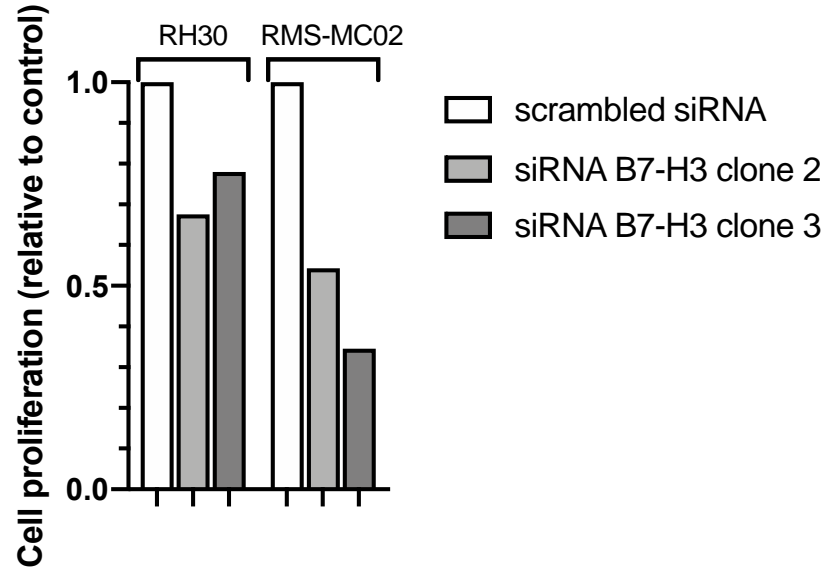
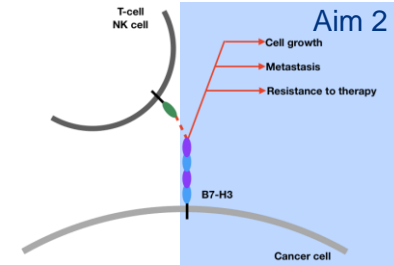
**RD**



**RH30**



# B7-H3 modulates cell proliferation



# Conclusion

- B7-H3 is the most abundant immune checkpoint molecule expressed in pediatric rhabdomyosarcoma
- B7-H3 knockdown improves anti-tumor immune response
- B7-H3 modulates tumor cell proliferation





Thank you

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