



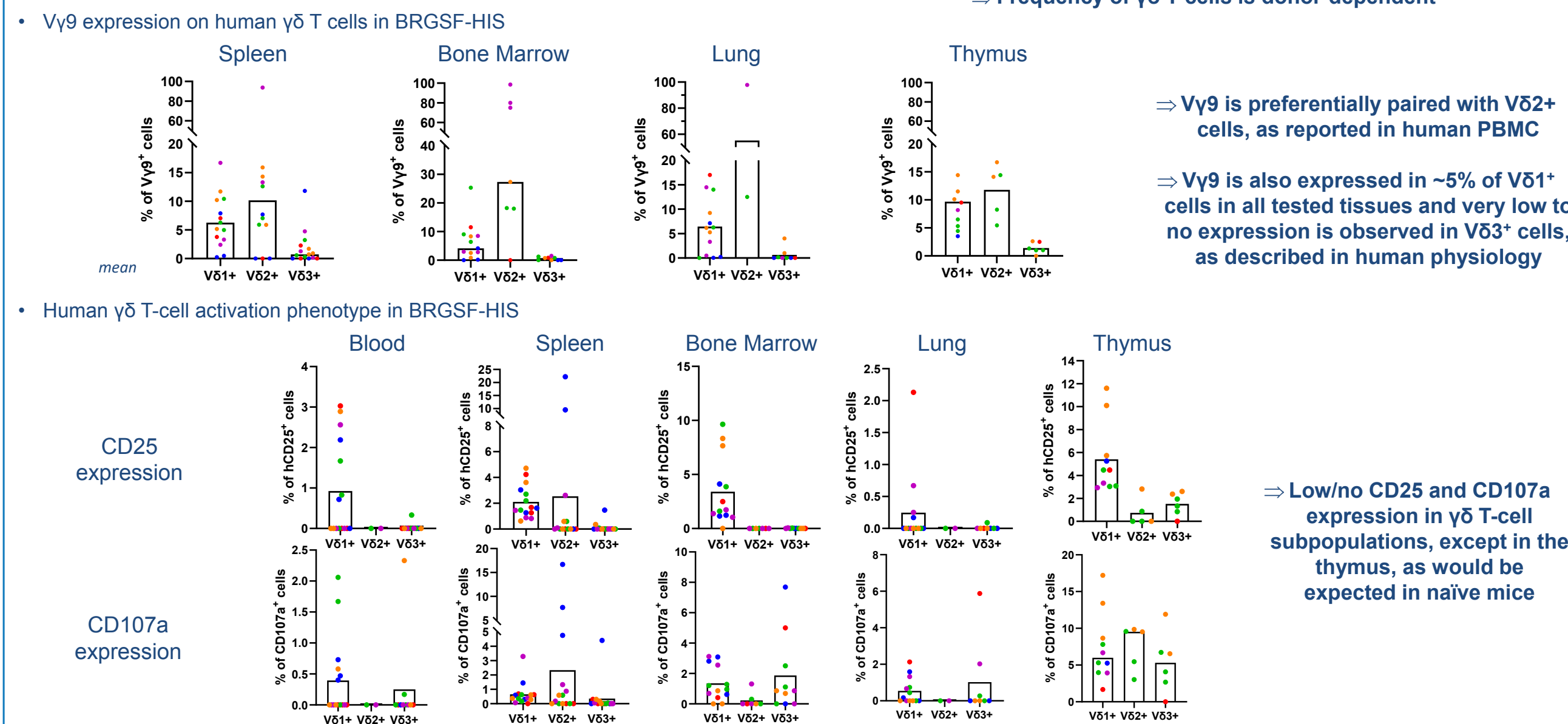
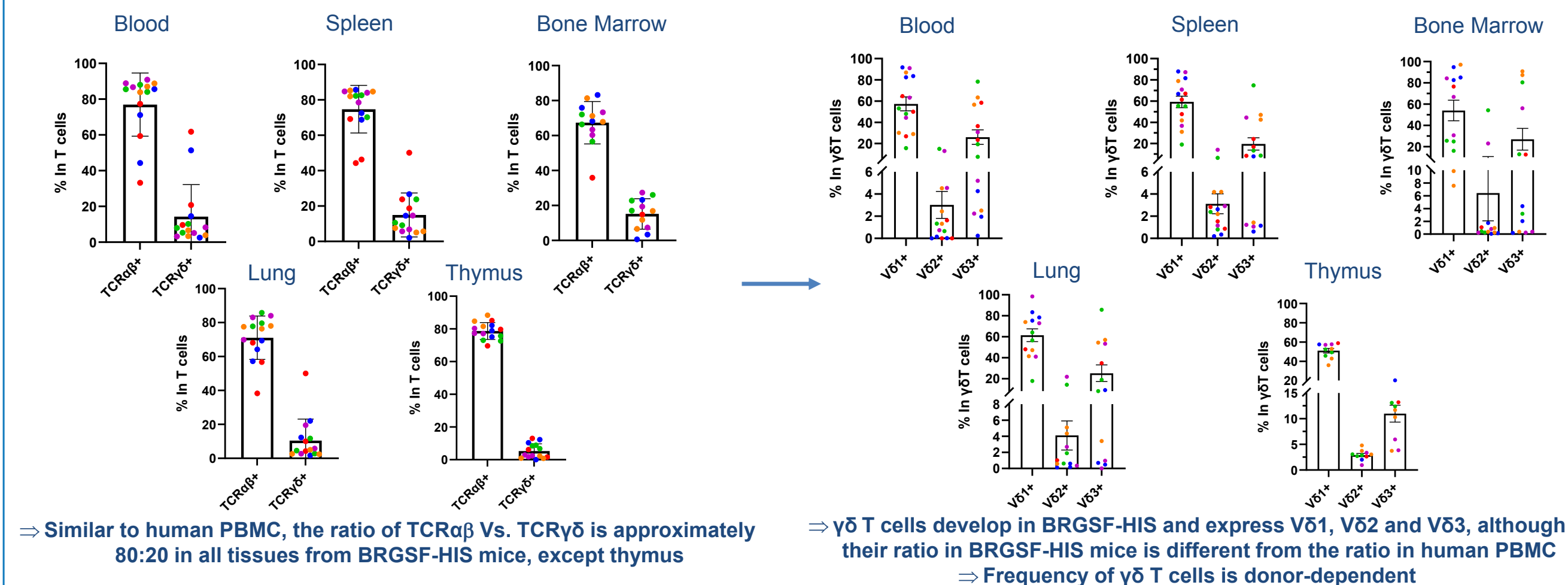
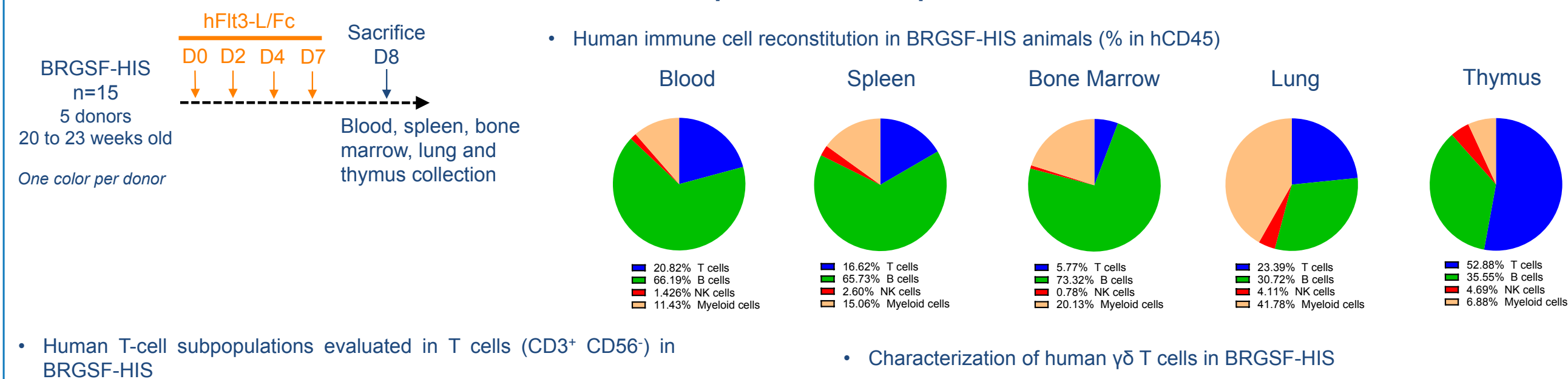
Assessment of $\gamma\delta$ T-cell therapies in humanized mice

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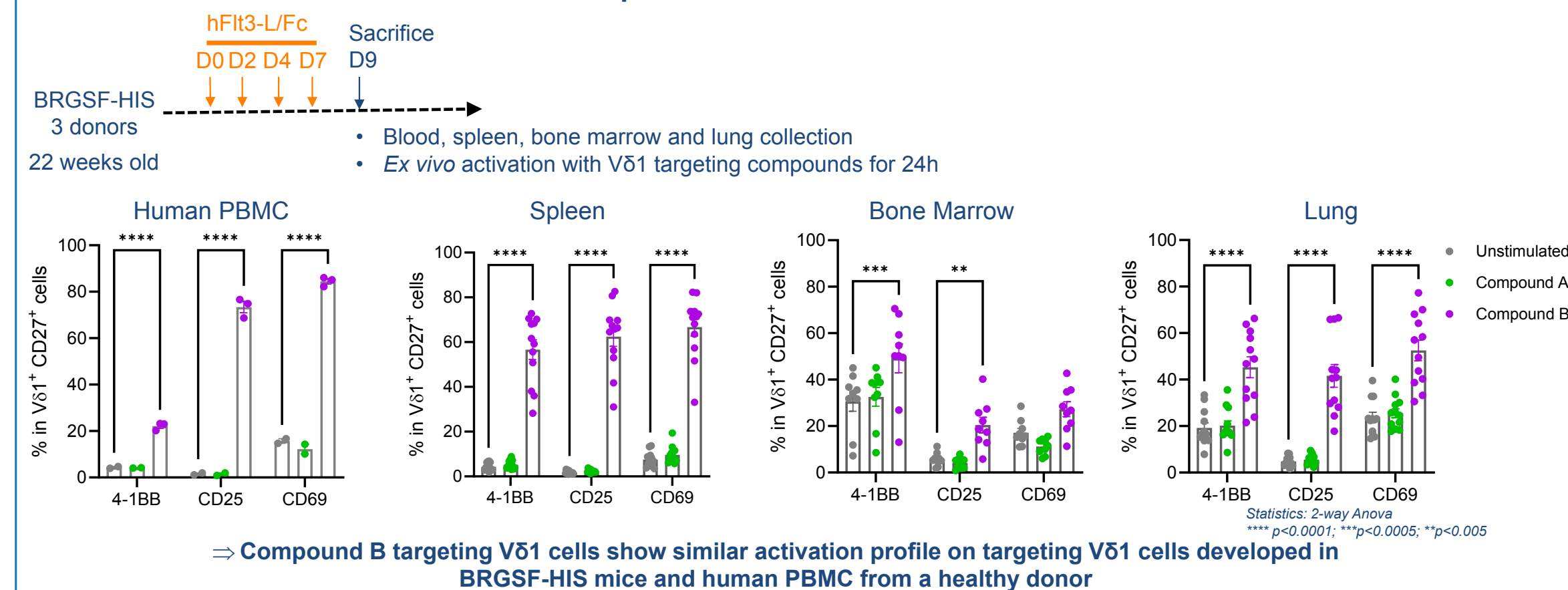
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Background: Current therapeutic approaches involving $\gamma\delta$ T cells include adoptive cell transfer, *in vivo* stimulation and combined therapies. While preliminary results are promising, investigation of such therapies in preclinical models is challenging, because $\gamma\delta$ T cells are not developed at satisfactory levels in most of the humanized mouse models. Here we describe the presence and functionality of $\gamma\delta$ T cells in BRGSF (BALB/c Rag2^{-/-}, IL2R γ ^{-/-}, SIRP α ^{NOD} and Flt3^{-/-}), a highly immunodeficient mouse featuring reduced murine myeloid cells. BRGSF mice reconstituted with human cord blood CD34⁺ cells (BRGSF-HIS) develop functional lymphoid and myeloid compartments. This engraftment is stable over a year⁽¹⁾ and mice do not develop GvHD.

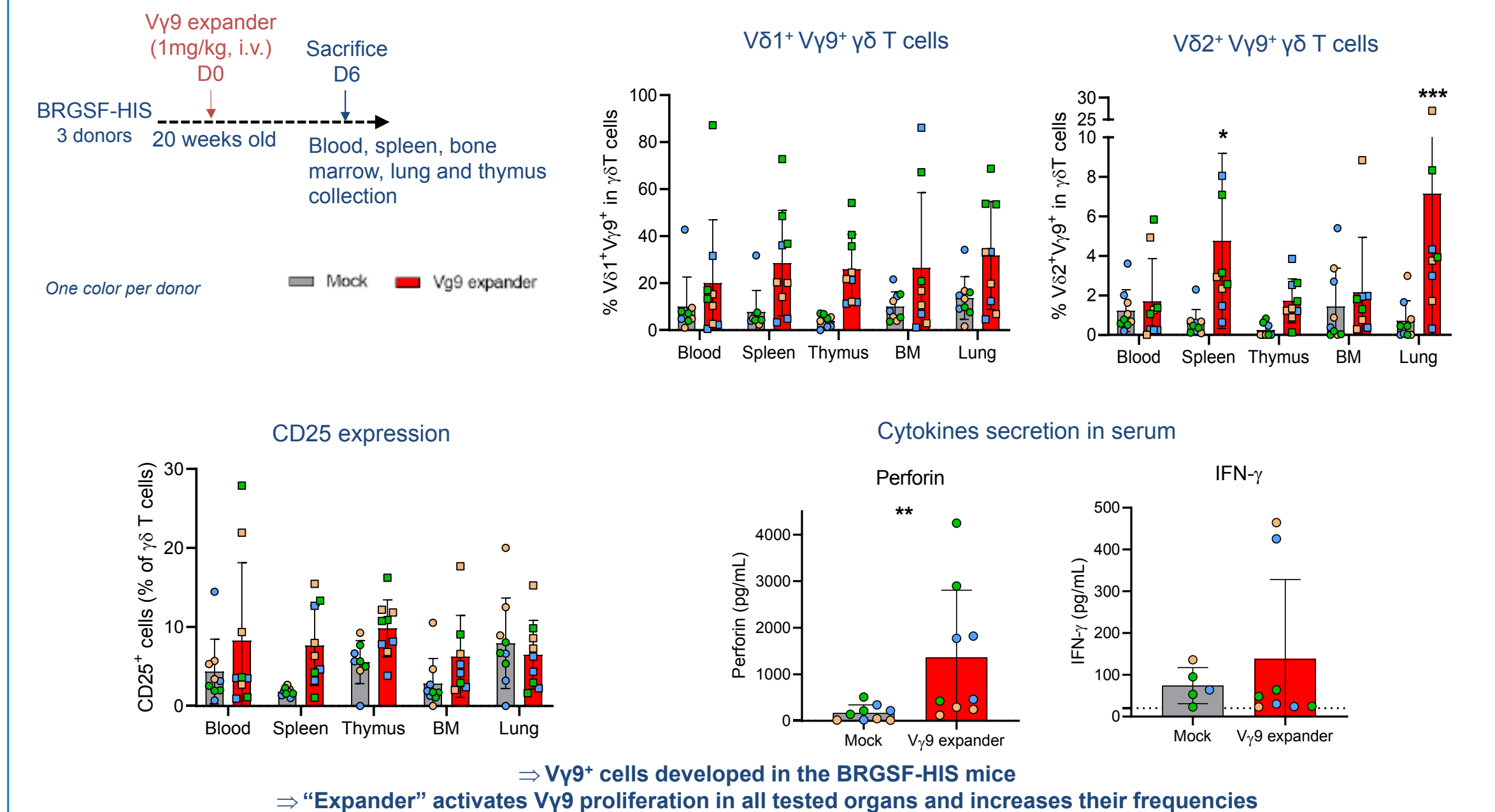
1. $\gamma\delta$ T cells develop in BRGSF-HIS mice



2. Ex vivo $\gamma\delta$ T-cell activation in BRGSF-HIS mice



3. In vivo expansion of $\gamma\delta$ T V γ 9⁺ cells in BRGSF-HIS mice



Conclusion: The development of functional $\gamma\delta$ T cells in BRGSF-HIS mice brings a new perspective to the assessment of therapies targeting this cell population in humanized mouse models.

- References:**
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 - (2) Li Y, Li G, Zhang J, Wu X, Chen X. The Dual Roles of Human $\gamma\delta$ T Cells: Anti-Tumor or Tumor-Promoting. Front Immunol. 2021 Feb 16;11:619954
 - (3) Clark BL, Thomas PG. A Cell for the Ages: Human $\gamma\delta$ T Cells across the Lifespan. Int J Mol Sci. 2020 Nov 24;21(23):8903

