



XIX CONGRESSO
NAZIONALE
SIES 2026

**CD9 DEFINES THE DISEASE-PROPAGATING
HEMATOPOIETIC STEM CELL POPULATION IN
MYELOFIBROSIS**

Ruggiero Norfo

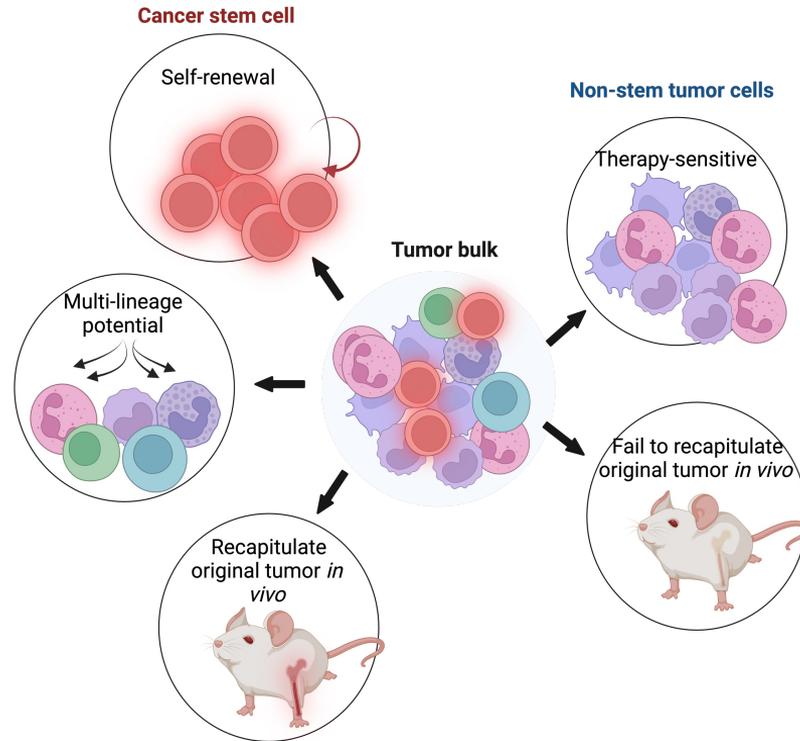
Firenze | 4-6 marzo 2026
Palazzo degli Affari



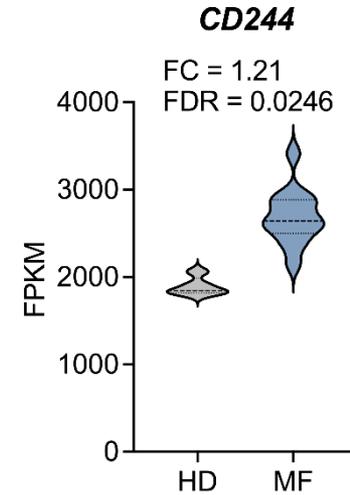
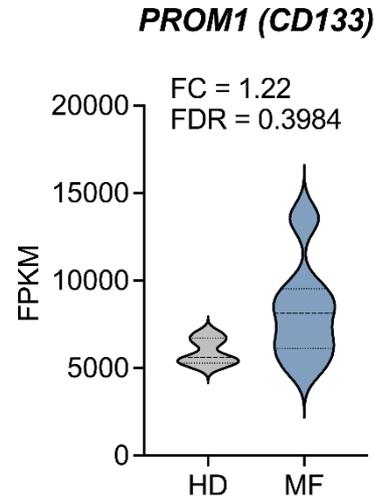
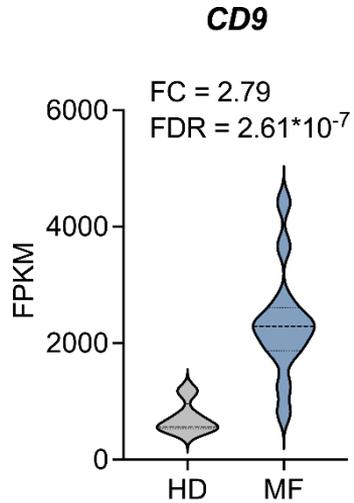
Disclosures of Ruggiero Norfo

Company name	Research support	Employee	Consultant	Stockholder	Speakers bureau	Advisory board	Other
Incyte	X						

Targeting MF cancer stem cells



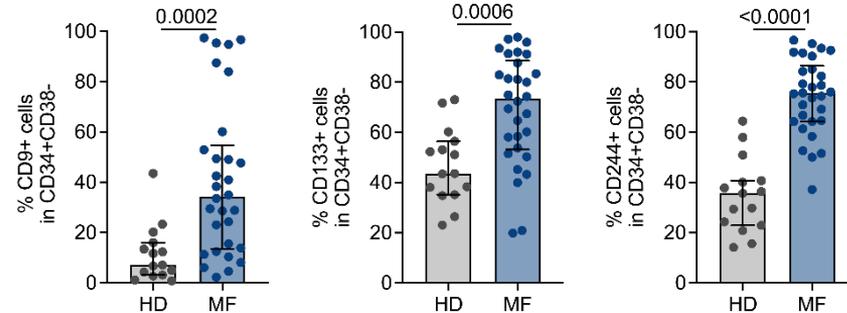
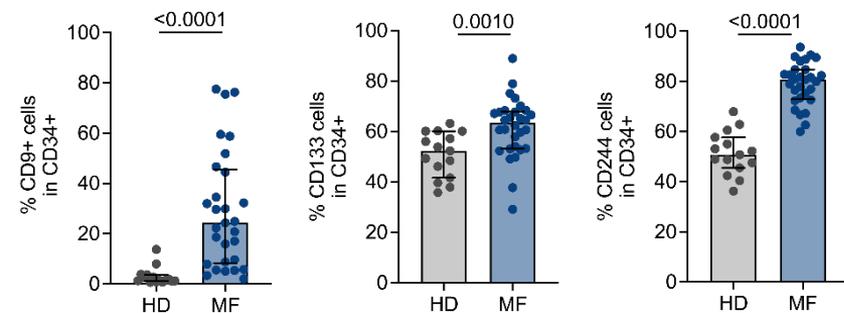
Transcriptomics on MF CD34+CD38- cells



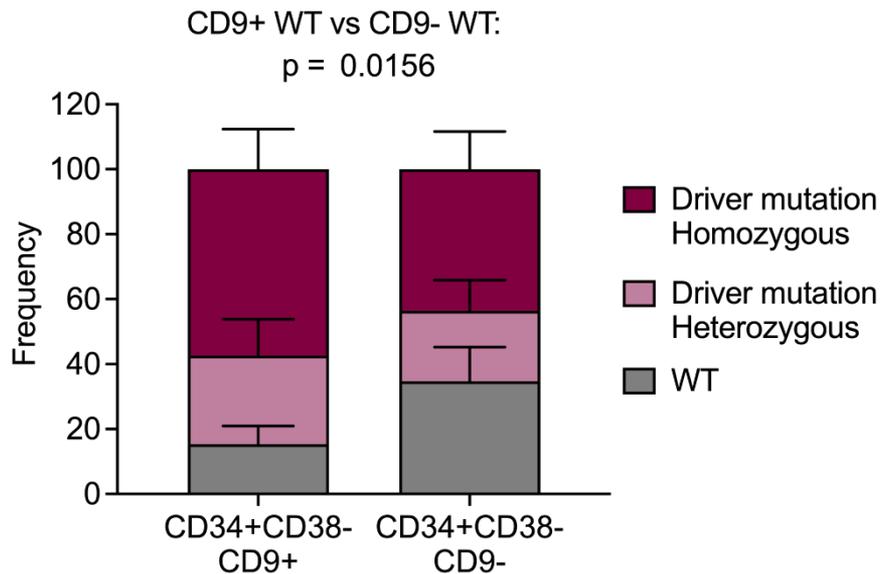
CD9, CD133 and CD244 expression are increased in MF HSPCs/ HSCs

CD34+

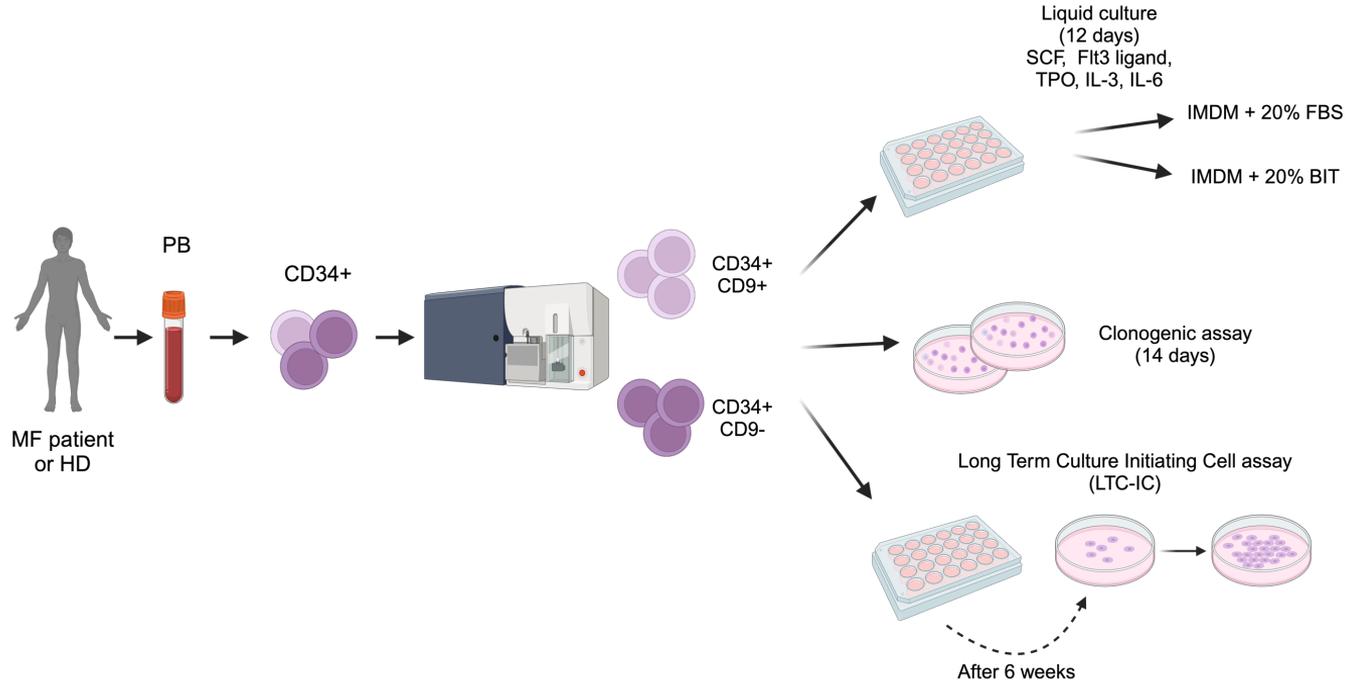
CD34+CD38-



Frequency of mutated cells is increased among CD9+ cells

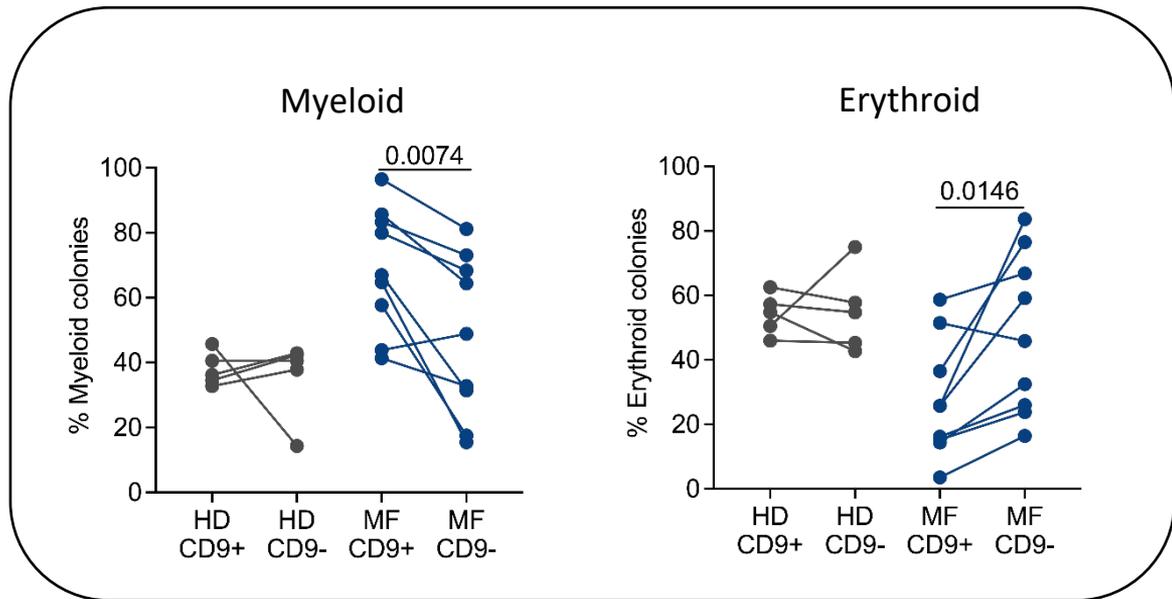
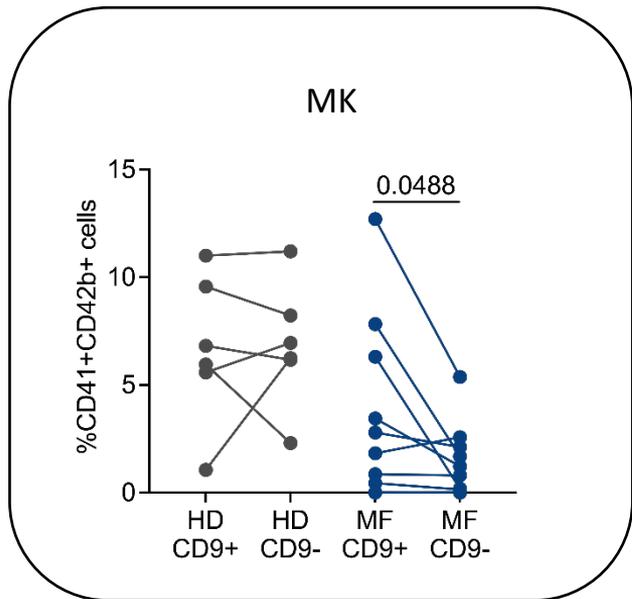


Experimental design- *in vitro*

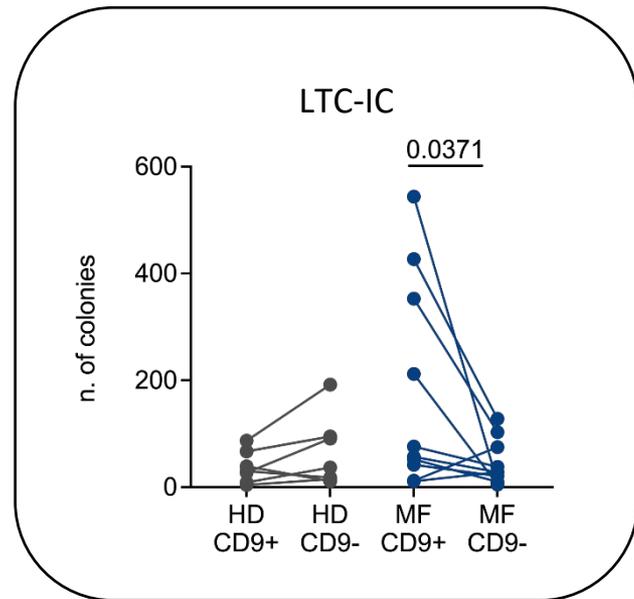
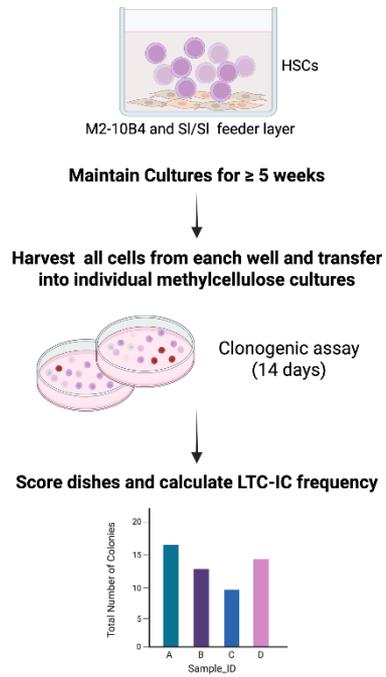
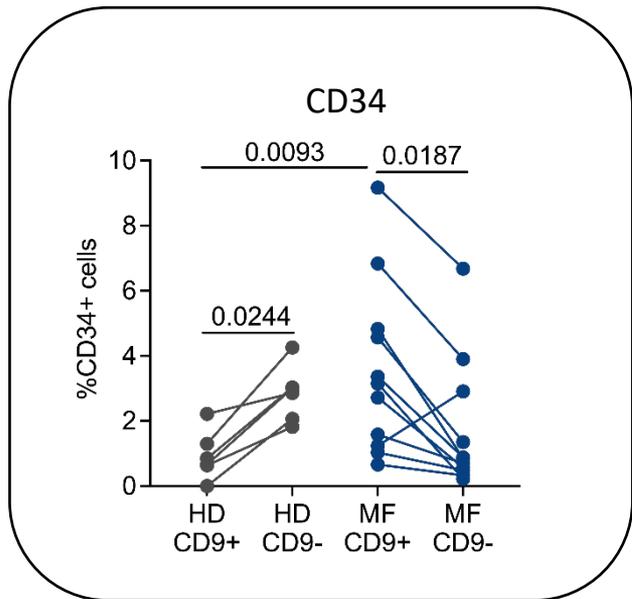




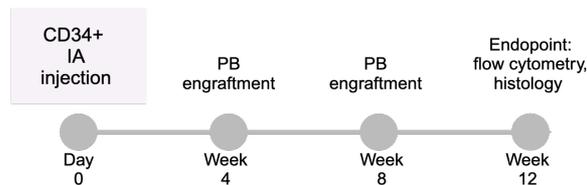
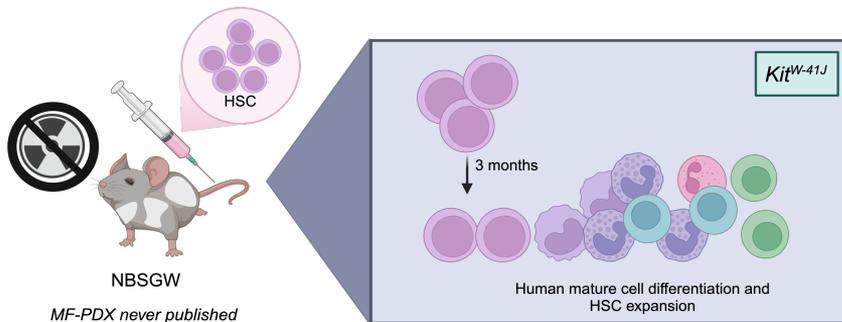
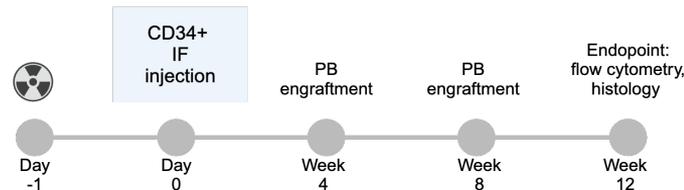
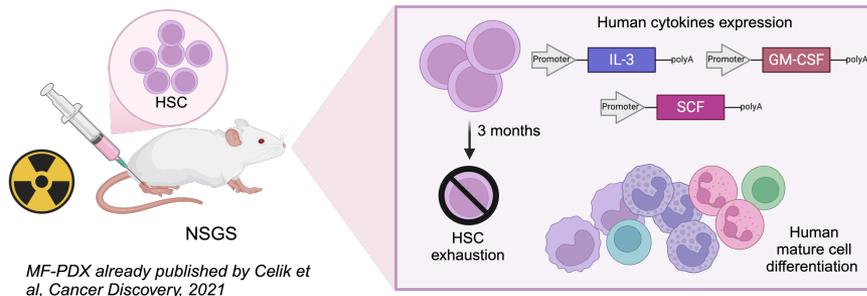
MF CD9+ HSPCs show increased megakaryocytic and myeloid potential in culture



MF CD9+ HSPCs exhibit higher frequencies of long-term culture-initiating cells

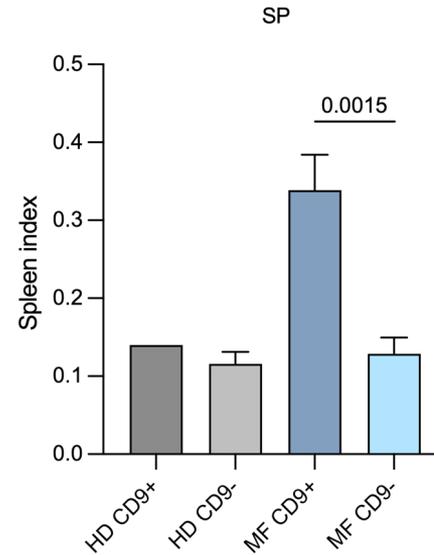
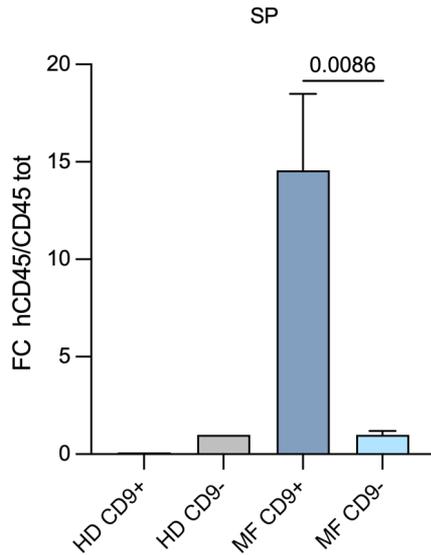


Experimental design- *in vivo*





MF CD9+ NSGS mice display superior spleen engraftment and increased spleen index

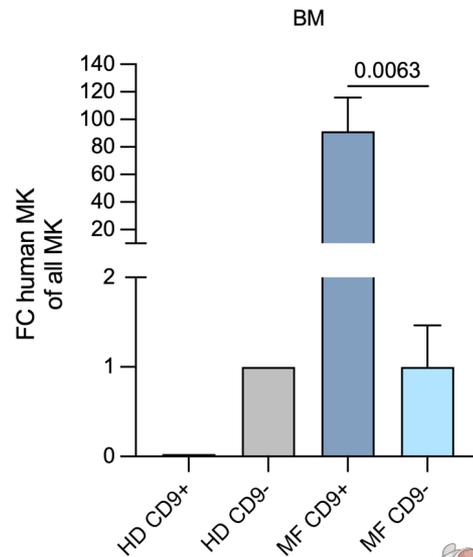
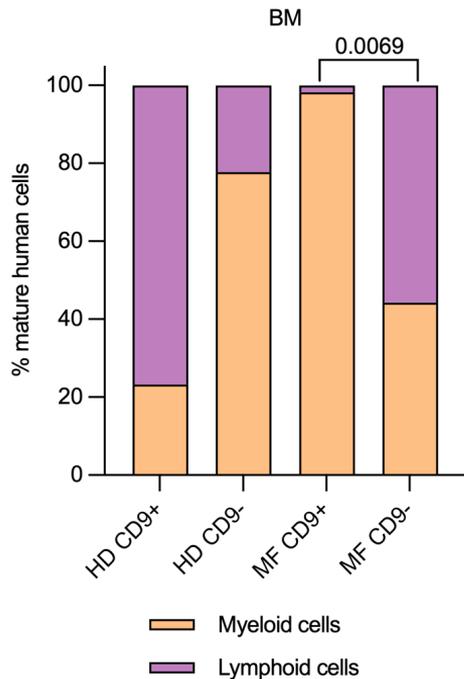
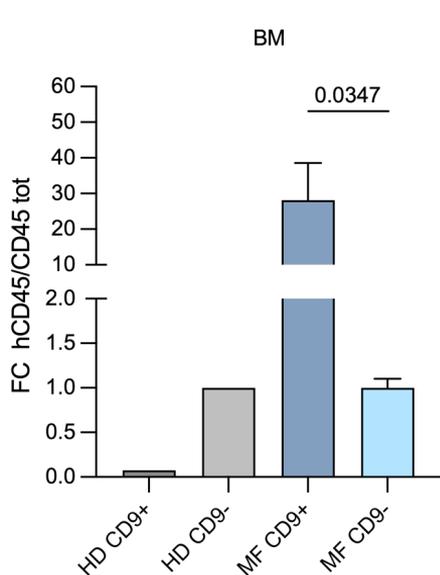


Recipient: NSGS

MF PDX mice generated from 3 patients



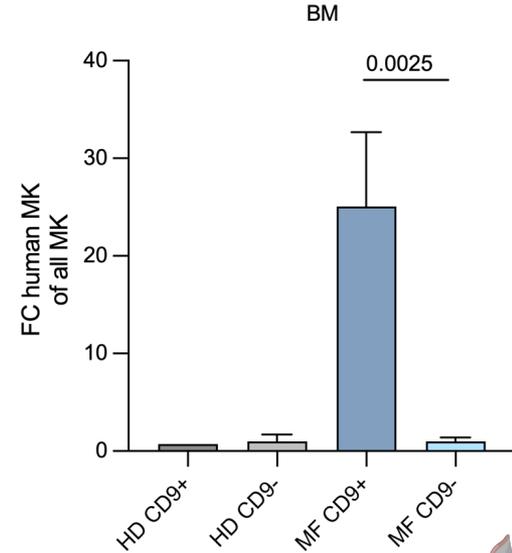
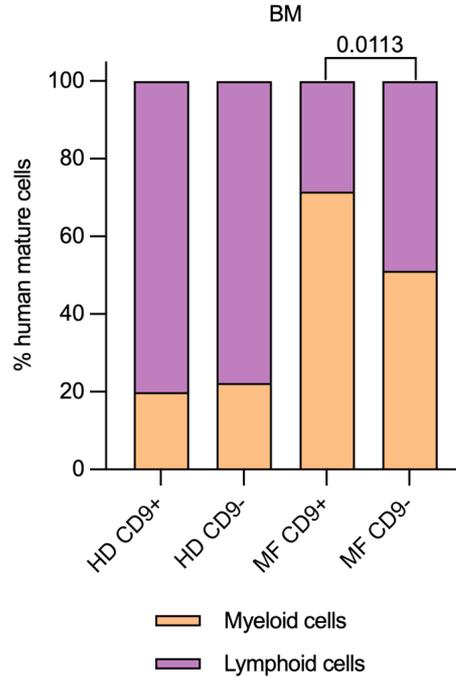
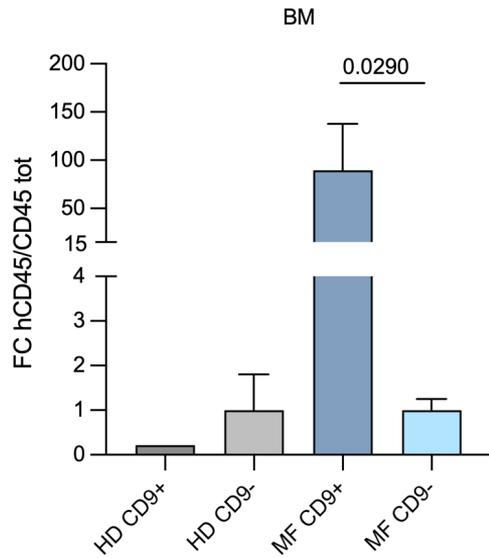
MF CD9+ NSGS mice display superior BM engraftment and greater differentiation towards myeloid and MK lineages



Recipient: NSGS

MF PDX mice generated from 3 patients

MF CD9+ NBSGW mice display higher BM engraftment and greater differentiation towards myeloid and MK lineages

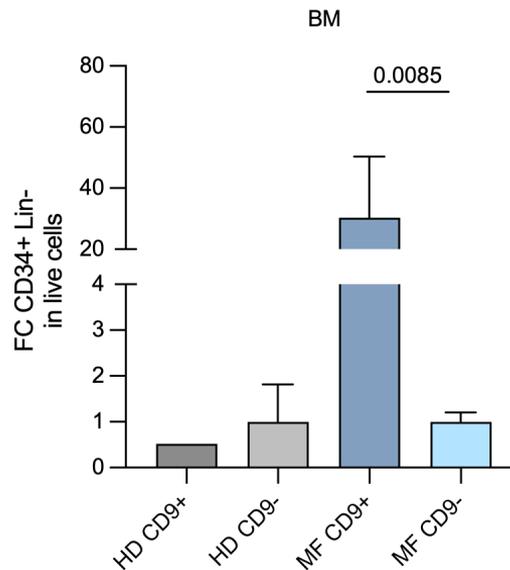


Recipient: NBSGW

MF PDX mice generated from 4 patients



NBSGW transplanted with MF cells retain human CD34+Lin- cells



Recipient: NBSGW

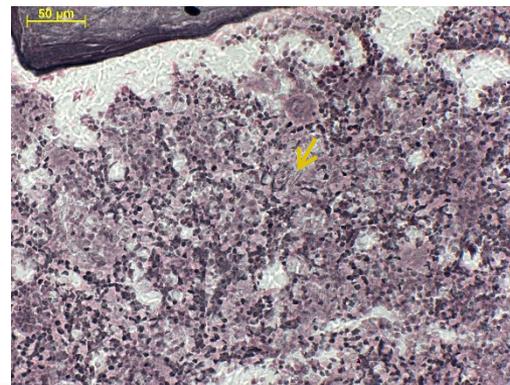
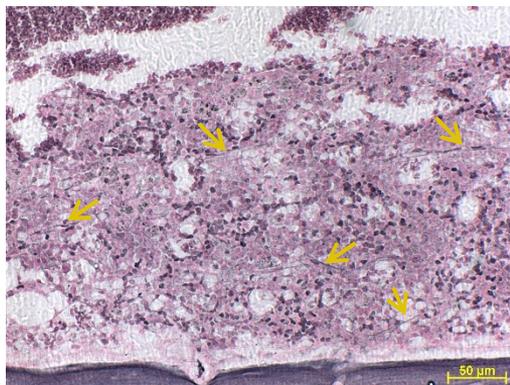
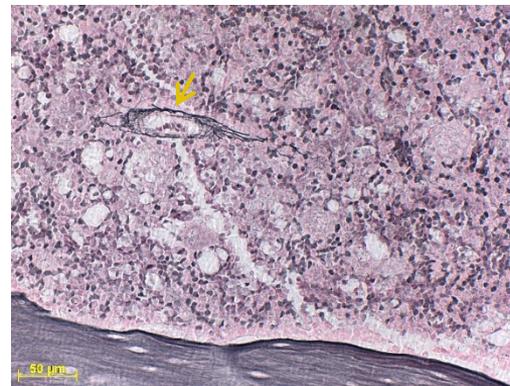
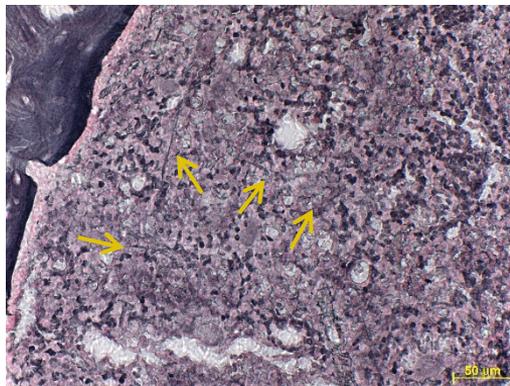
MF PDX mice generated from 4 patients

CD9+ HSPCs promote BM fibrosis in NBSGW

CD9+

CD9-

Gordon-Sweet 200x



Recipient: NBSGW

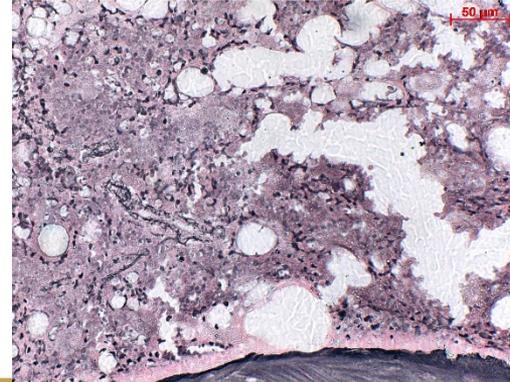
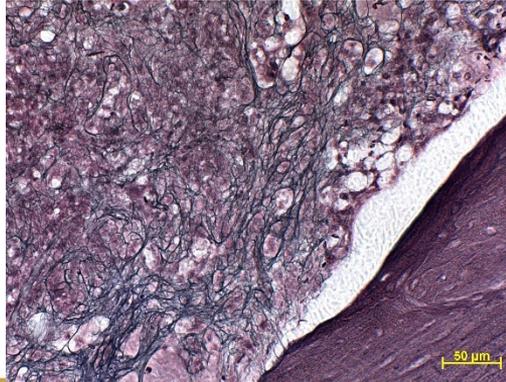
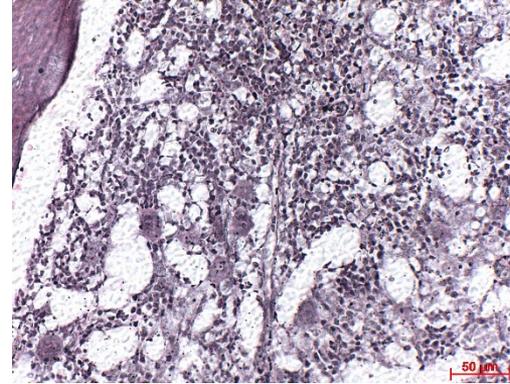
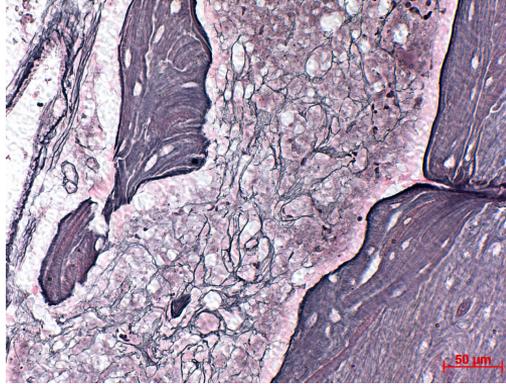


Extensive deposition of reticulin fibers is observed in MF CD9+ NSGS

CD9+

CD9-

Gordon-Sweet 200x



Recipient: NSGS

Conclusions

- CD9 marks a highly mutated stem cell subset with increased LTC-IC activity
- CD9+ HSPCs have high disease-repopulating potential in NSGS mice and self-renew in NBSGW
- CD9+ HSPCs promote splenomegaly in NSGS and bone marrow fibrosis in all tested mouse models



Acknowledgements

Rossella Manfredini

Lara Tavernari

Anita Neroni

Camilla Tombari

Sebastiano Rontauoli

Elena Genovese

Margherita Mirabile

Chiara Carretta

Sandra Parenti

Matteo Bertesi

Elisa Papa

Marica Malerba



Mario Luppi

Leonardo Potenza

Enrico Tagliafico

Monica Maccaferri

Massimo Dominici

Giulia Grisendi

Luca Fabbiani

Lorena Losi



Alessandro M. Vannucchi

Paola Guglielmelli

