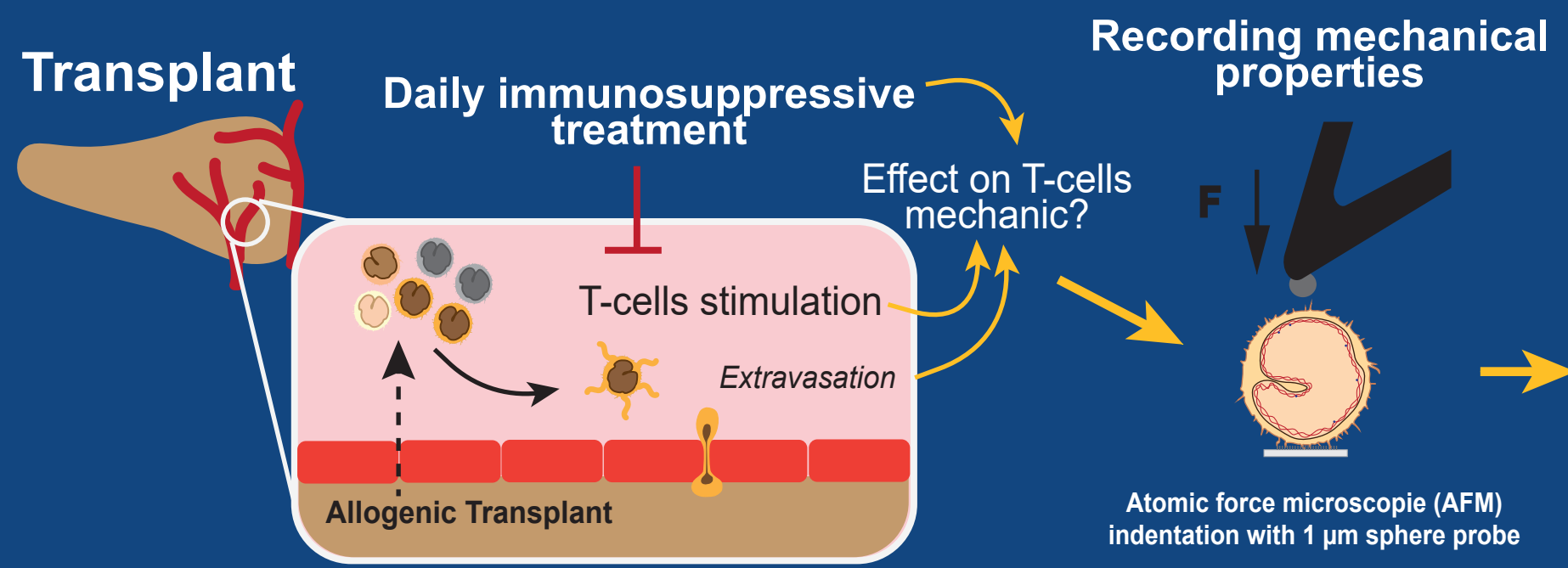


# Mechanobiological Modulation of Human Primary T-cells by Immunosuppressive drugs

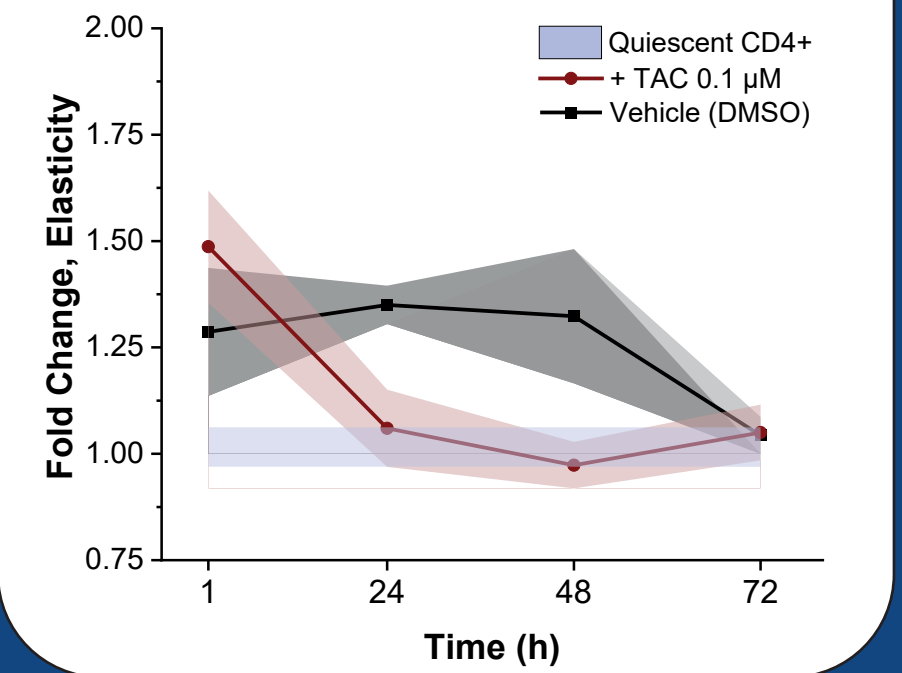
Alysson Duchalet<sup>1</sup>, Mar Alcaraz-Hurtado<sup>1</sup>, Miguel Fribourg<sup>2,3</sup>, Andra C. Dumitru<sup>1</sup>

<sup>1</sup>Louvain Institute of Biomolecular Sciences and Technologies, Université catholique de Louvain, Louvain-la-Neuve, Belgium; <sup>2</sup>Translational Transplant Research Center, Division of Nephrology, Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY 10029, USA; <sup>3</sup>Immunology Institute, Icahn School of Medicine at Mount Sinai, New York, NY 10029, USA

## Missing links in graft rejection: T-cell mechanical properties and immunosuppressive effects

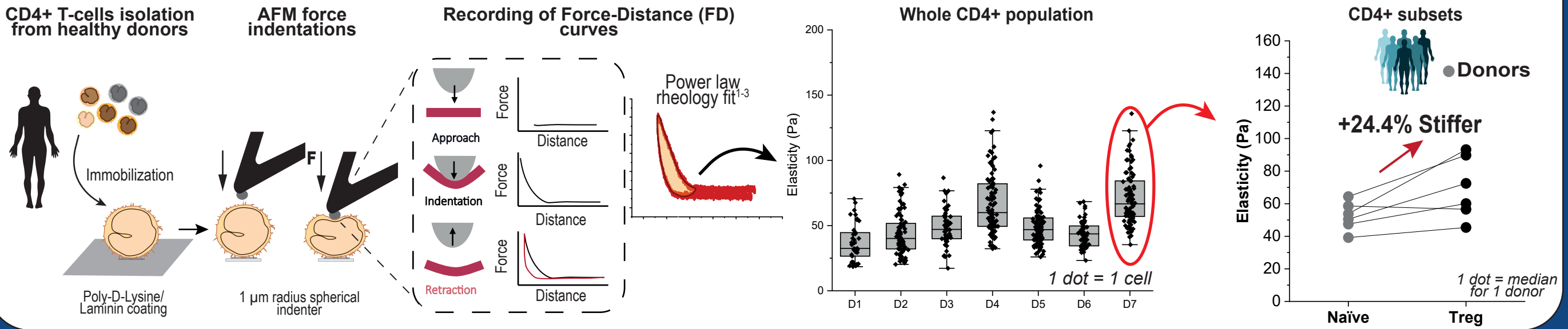


## Tacrolimus (TAC) annihilate mechanical storm induced by TCR activation

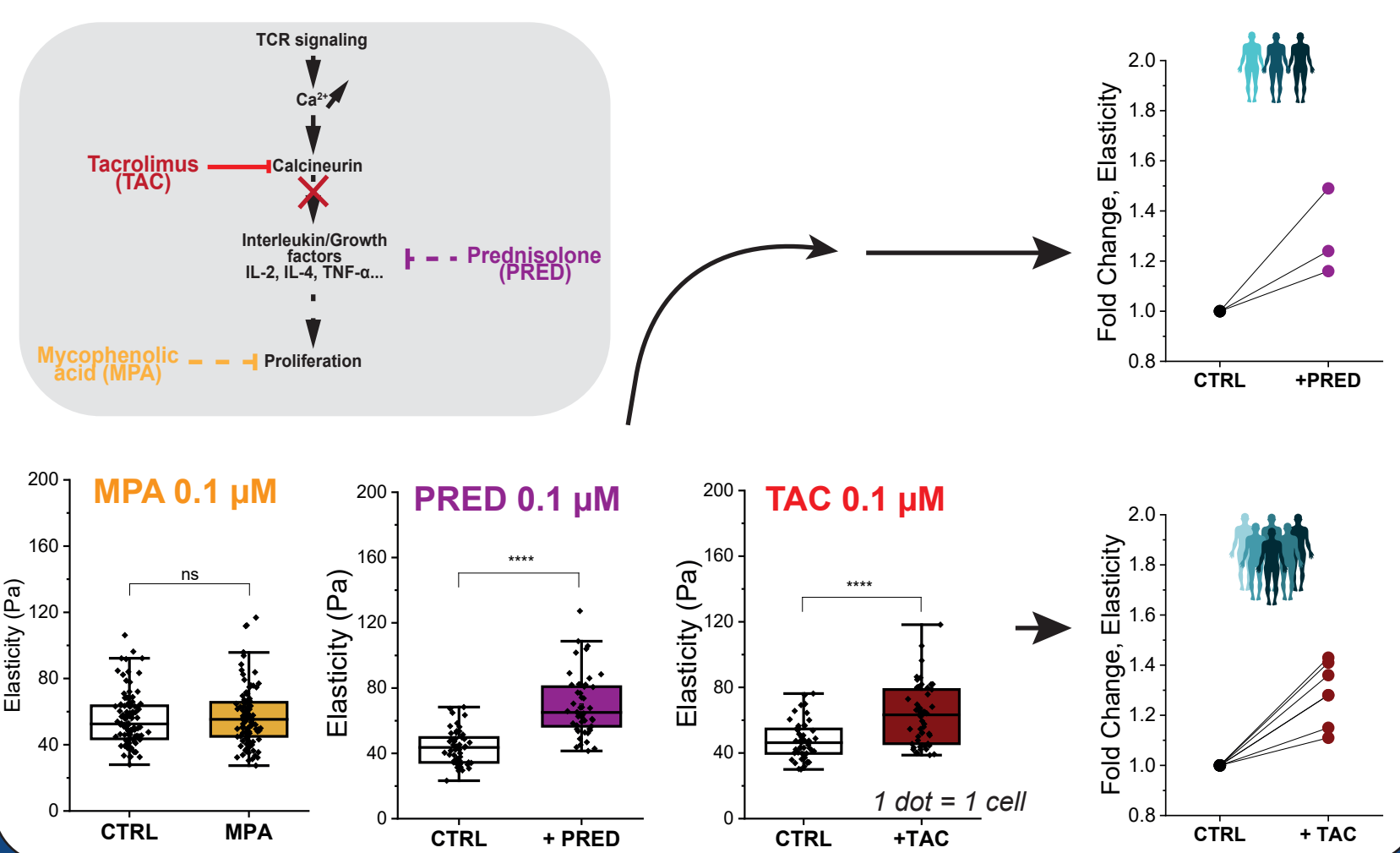


## Immunosuppressive drugs alter the mechanic of CD4+ quiescent T-cells

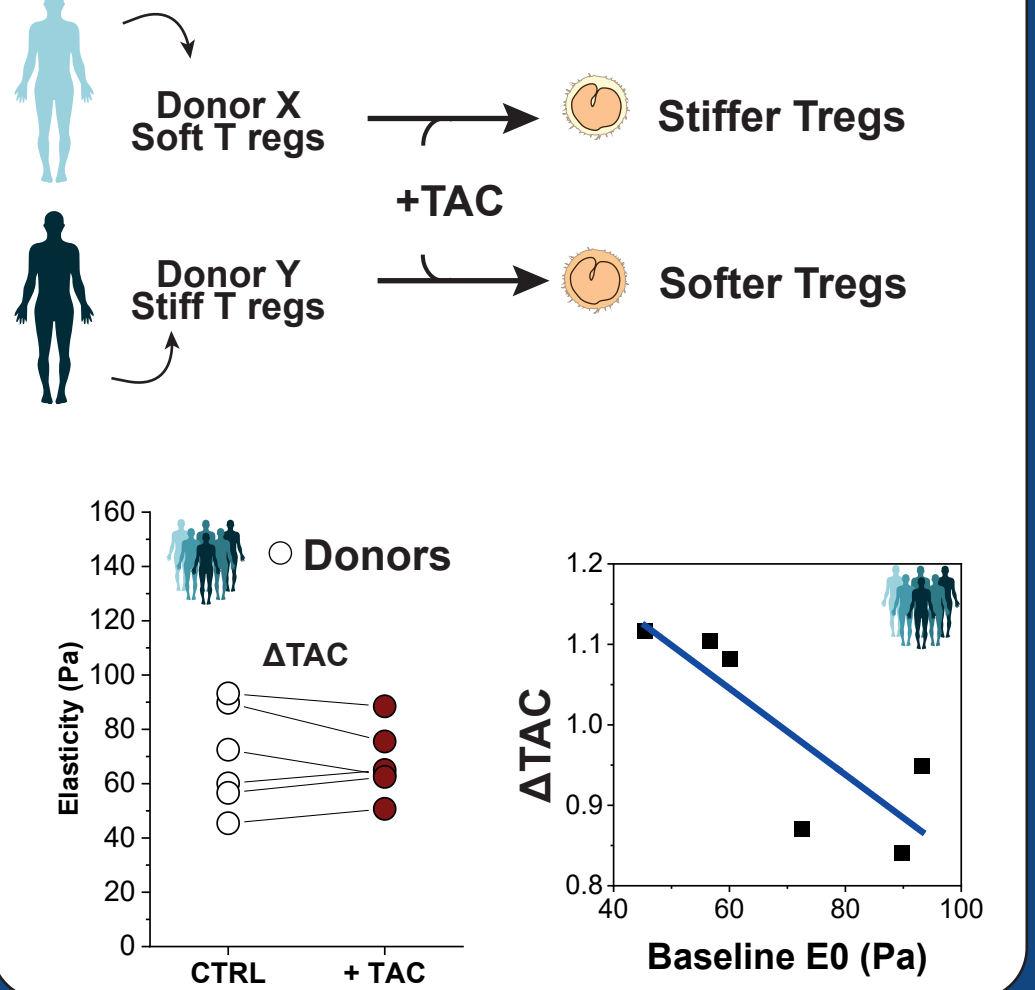
### Interdonor CD4+ mechanical variability and subset specific heterogeneity



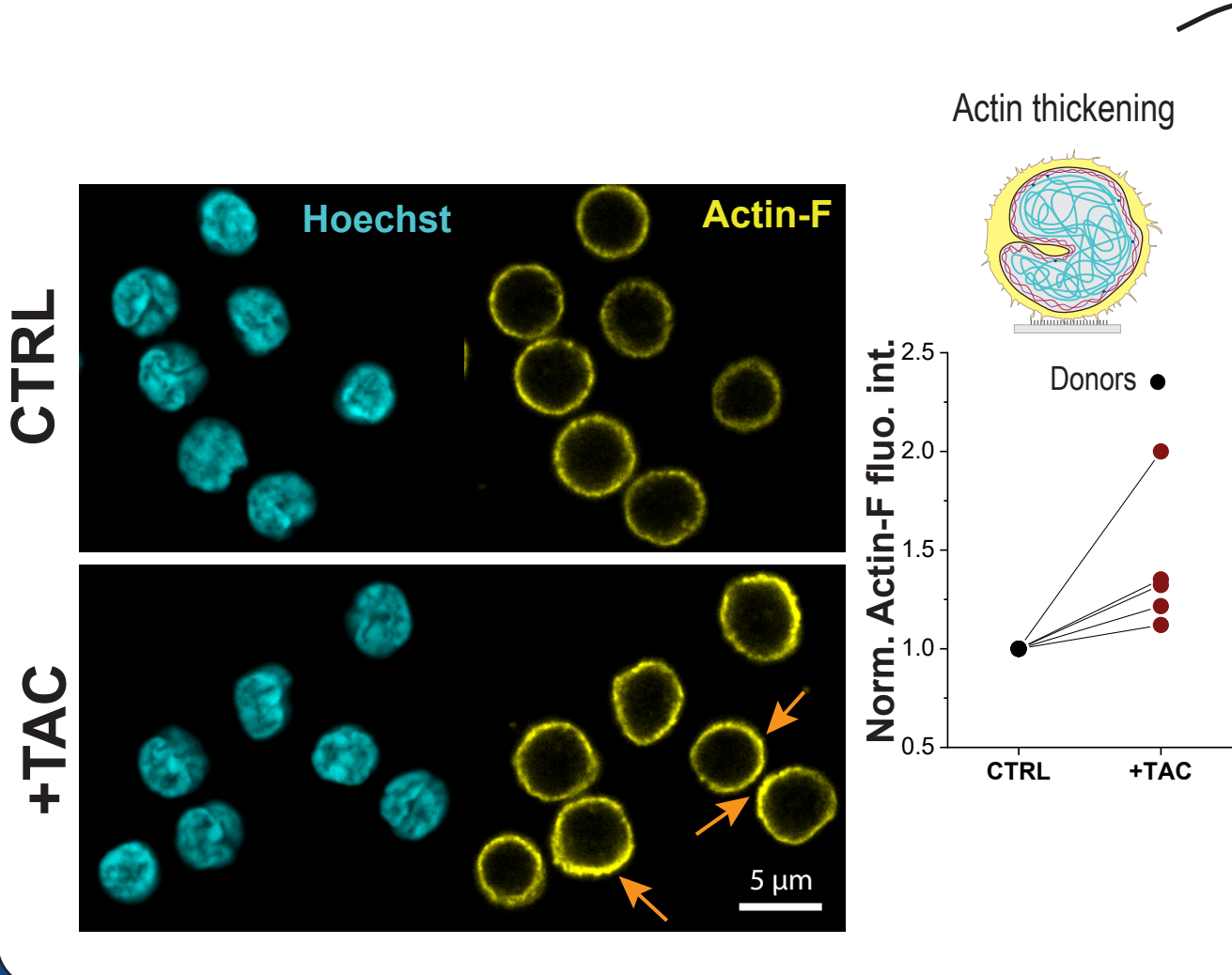
## Immunosuppressive drugs selectively alter CD4+ mechanic



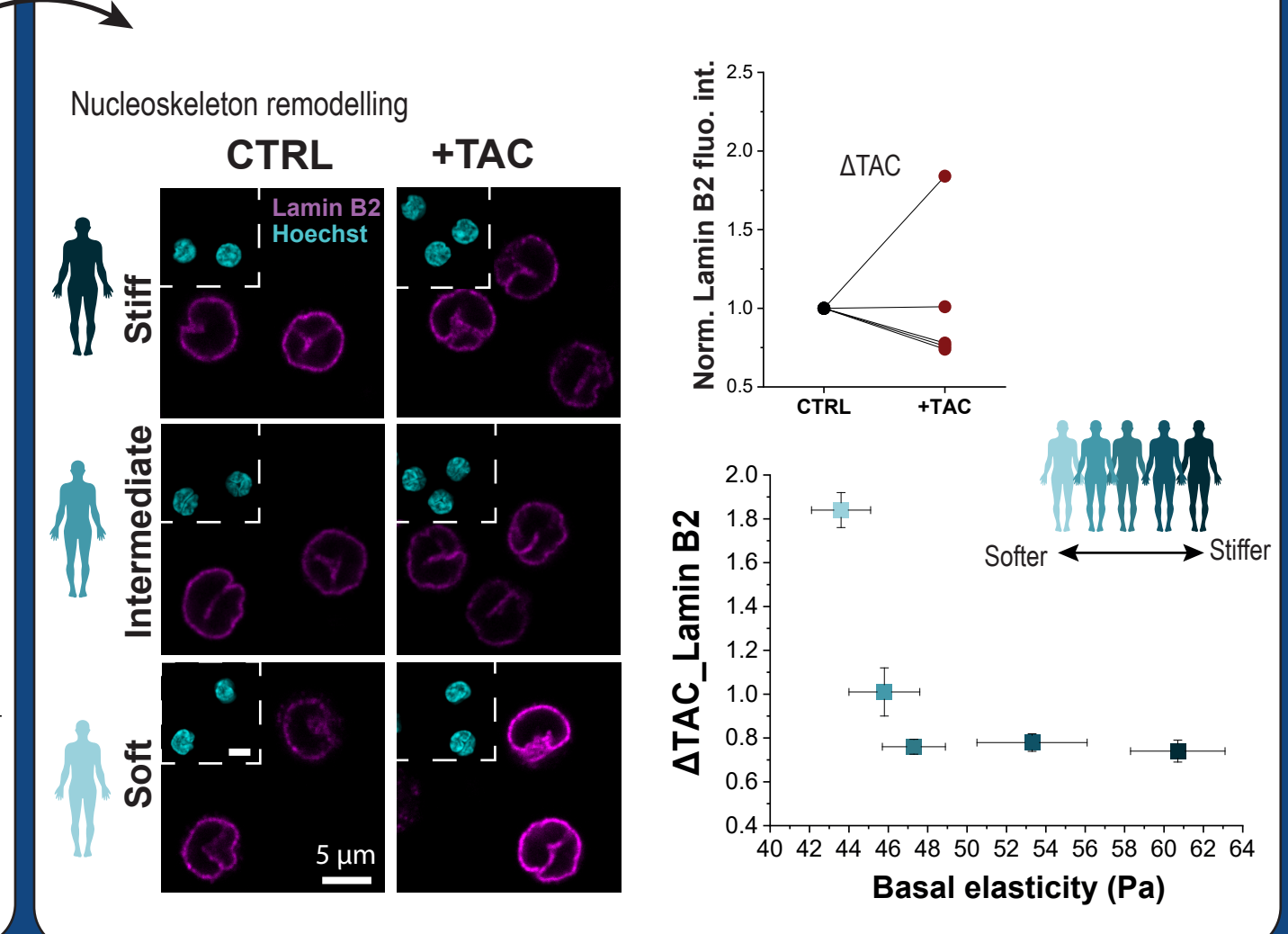
## Donor-specific mechanical response of Tregs to TAC



## TAC-induced stiffening is actin-dependent



## TAC-induced Lamin B2 mechanosensing



<sup>1</sup>Gisbert, V.G. et al., Small (2023)  
<sup>2</sup>Garcia, P.D. et al., Nanoscale (2020)  
<sup>3</sup>Garcia, P.D. et al, Nanoscale (2018)