



European
Crohn's and Colitis
Organisation

Unraveling Vedolizumab mechanism of action in Ulcerative Colitis

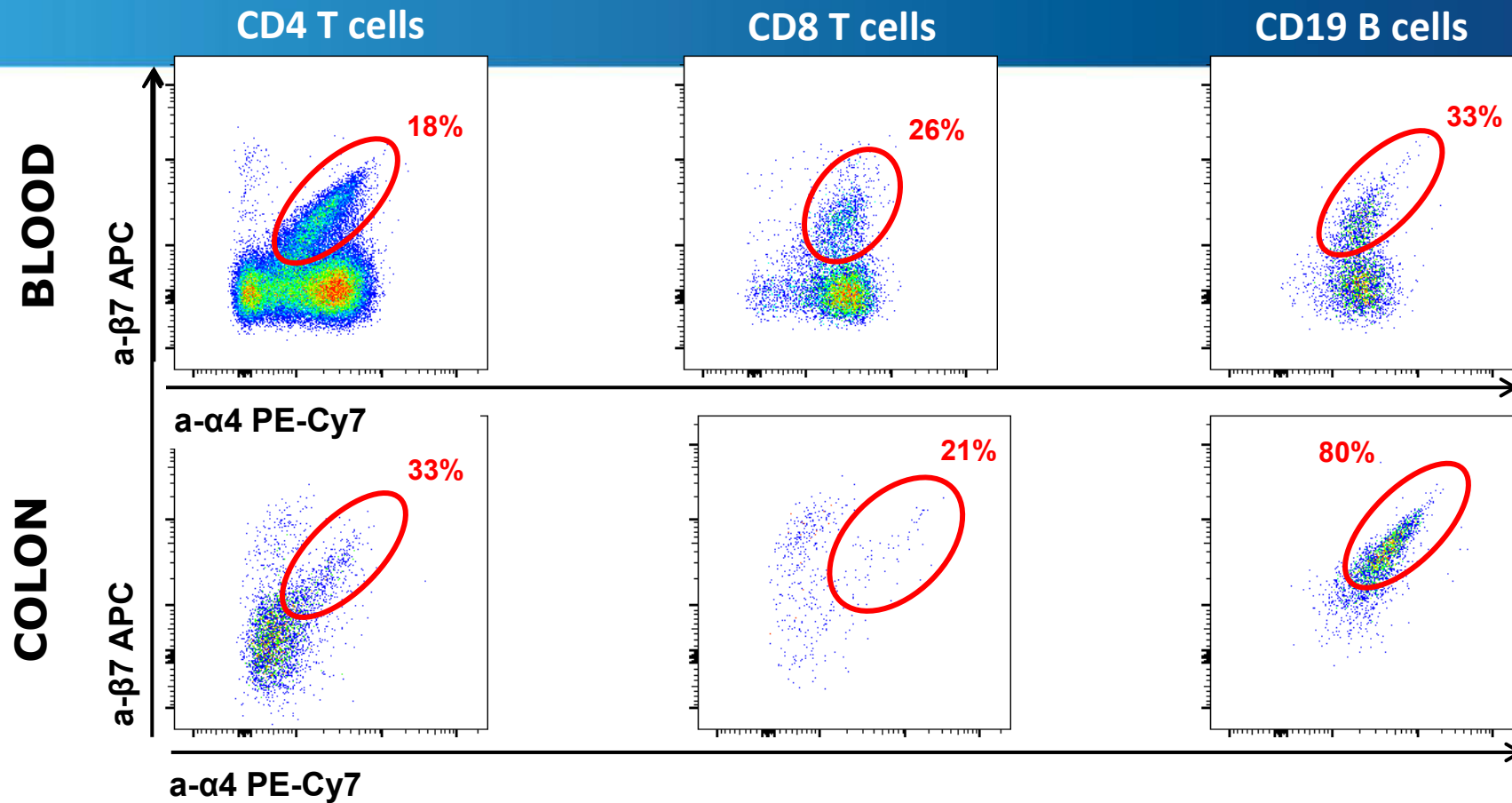
Veny M¹, Garrido-Trigo A¹, Bassolas-Molina H¹, Masamunt MC¹, Esteller M¹, Arroyes M¹, Corraliza A¹, Tristán E², Fernández-Clotet A¹, Ordás I¹, Ricart I¹, Esteve M², Panés J¹, Salas A¹

¹ Department of Gastroenterology, IDIBAPS, Hospital Clínic, CIBERehd, Barcelona, Spain

² Department of Gastroenterology, Hospital Universitari Mutua Terrassa, CIBERehd, Terrassa, Spain

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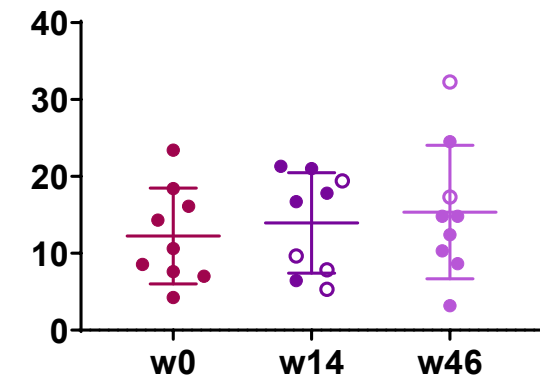
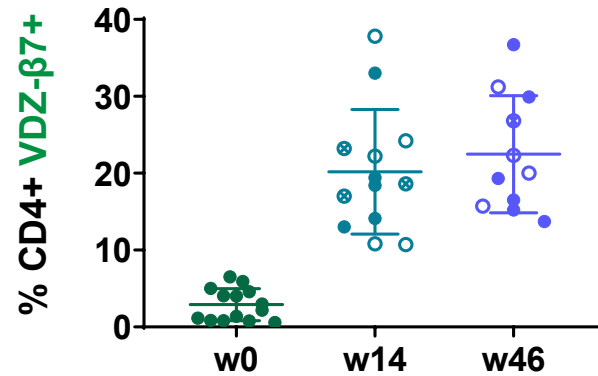
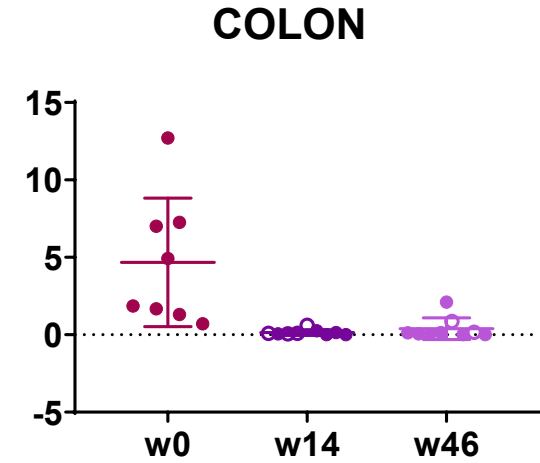
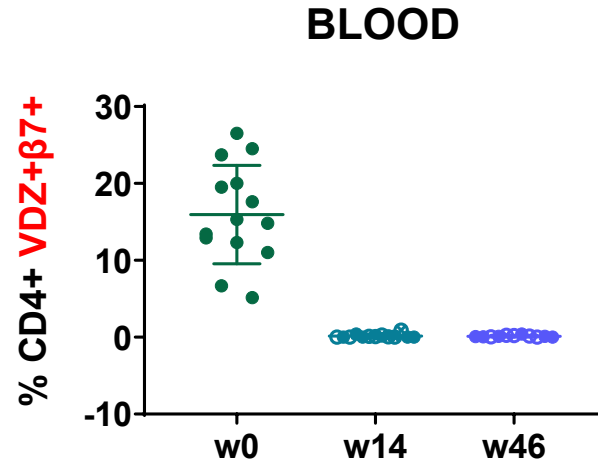
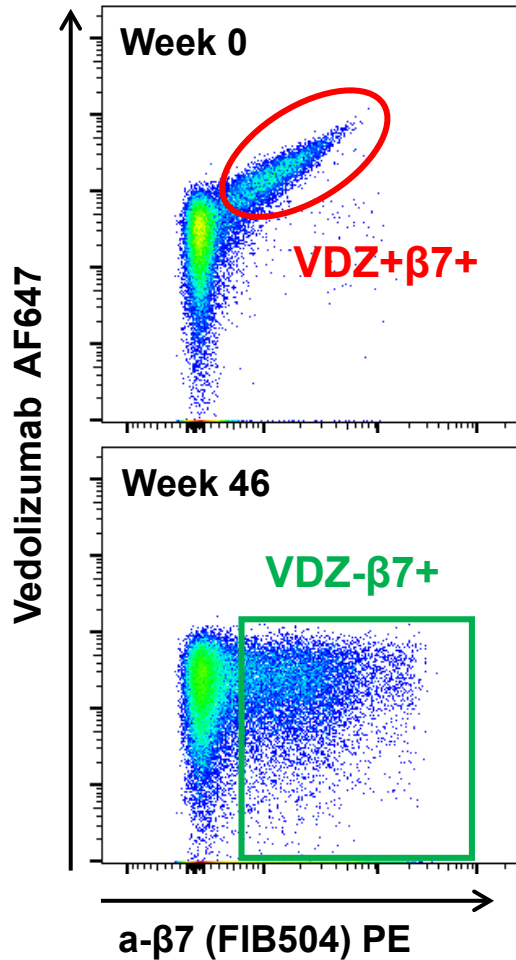


Hypothesis: Vedolizumab induces changes in the migration and integrin expression of lymphocytes that may correlate with disease remission in UC patients.

Objectives:

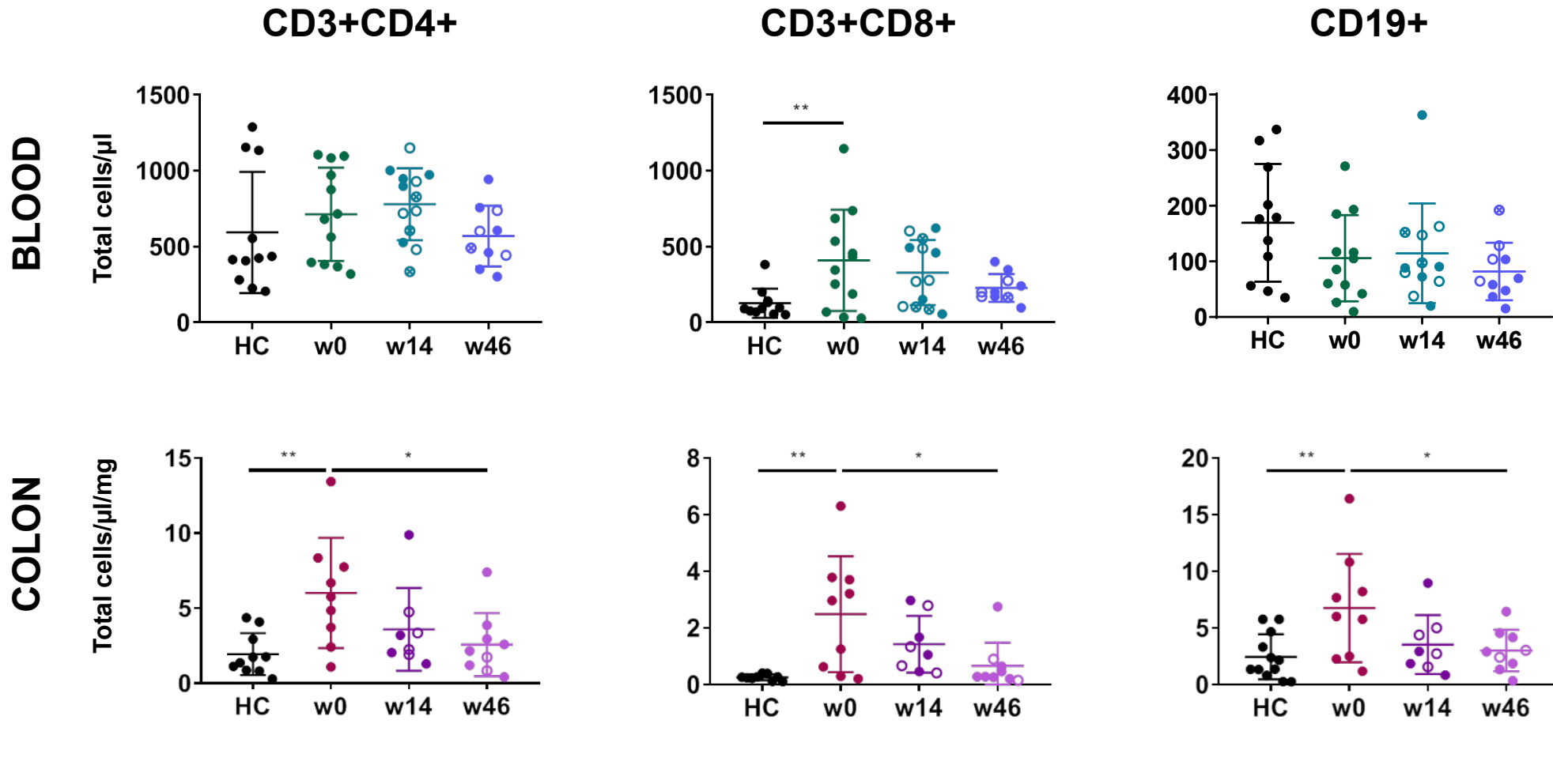
1. Determine the occupancy of $\alpha4\beta7$ achieved by Vedolizumab
2. Analyze the number of lymphocytes in the intestine and peripheral blood and how they change with Vedolizumab treatment.
3. Characterize the expression of integrins $\alpha4\beta7$ and $\alpha E\beta7$ before and after Vedolizumab treatment.

UC patients receiving Vedolizumab show full $\alpha 4\beta 7$ occupancy



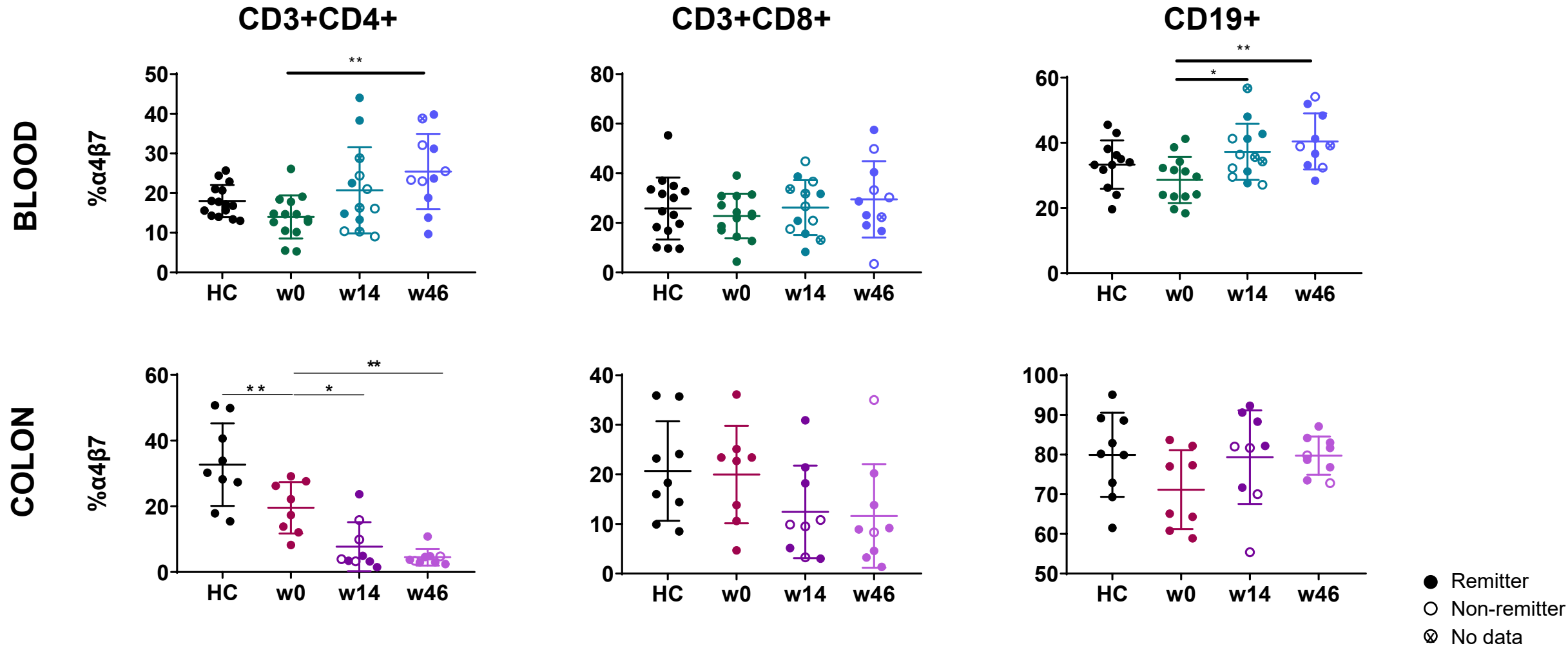
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Vedolizumab reduces the number of total T and B lymphocytes in the colon without affecting their numbers in blood



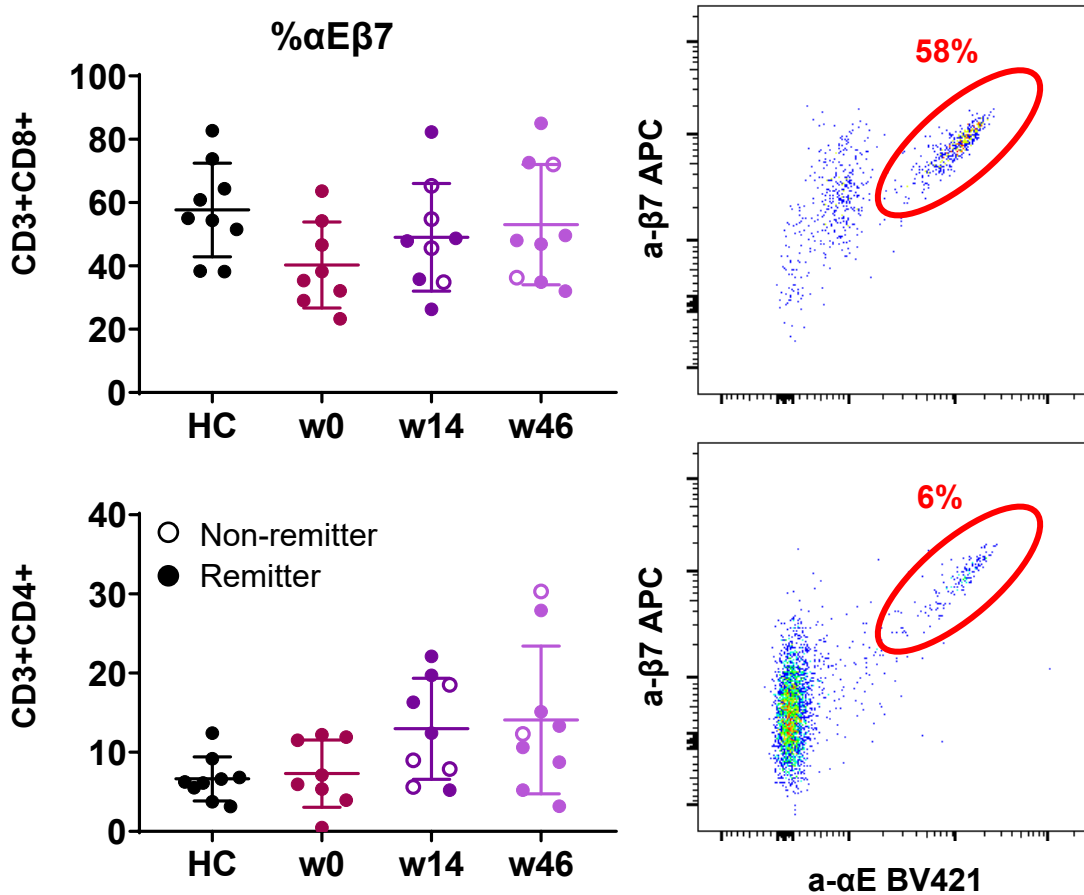
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VDZ treatment reduces intestinal $\alpha 4\beta 7^+$ CD4⁺ T cells without affecting $\alpha 4\beta 7^+$ plasma cells

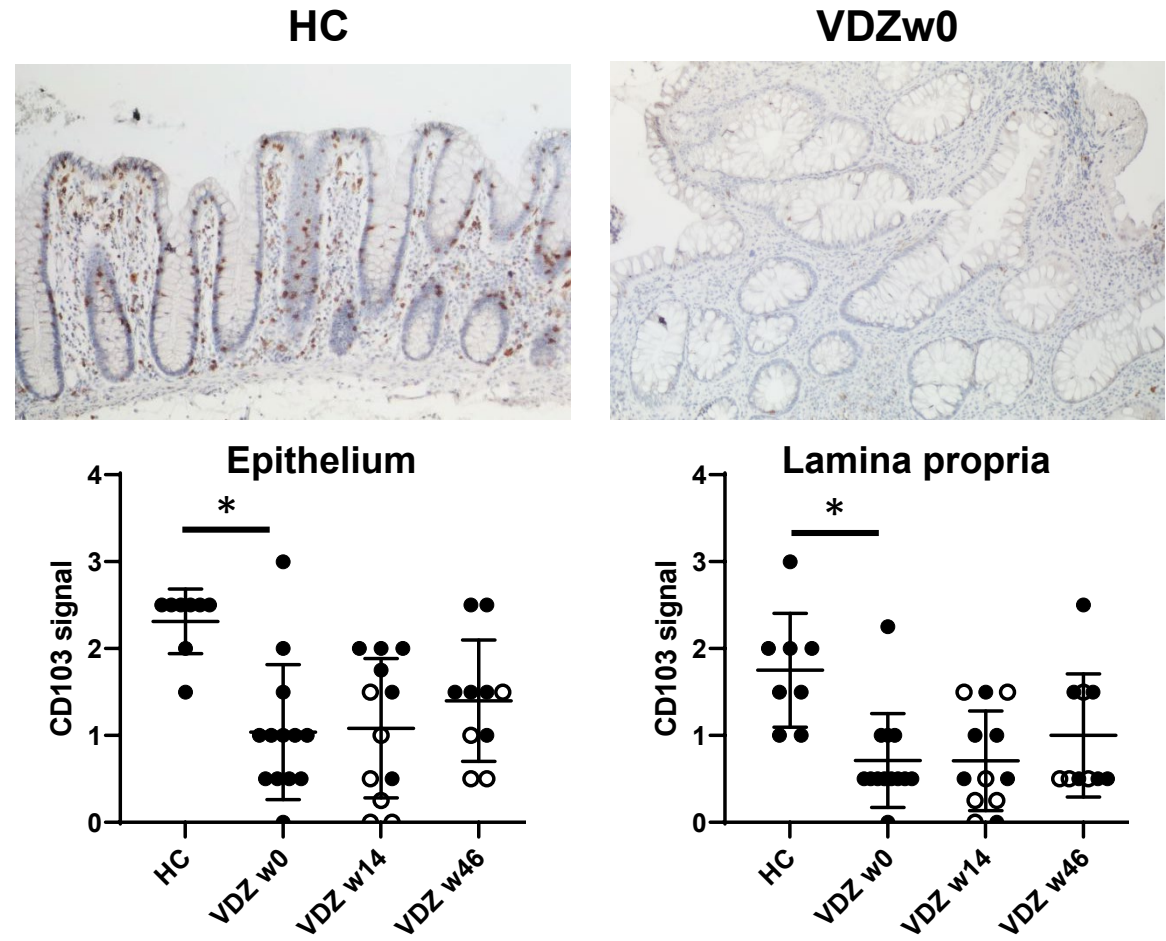


$\alpha E\beta 7^+$ cells are reduced in the colon of active UC patients

COLON. Flow cytometry % $\alpha E\beta 7$



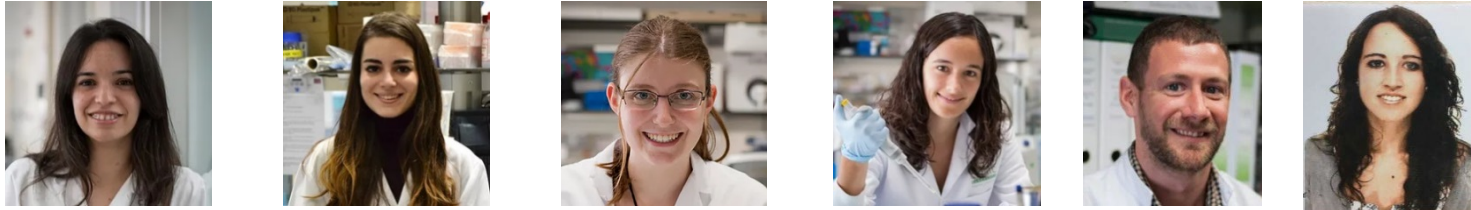
COLON. Immunohistochemistry αE



Conclusions

- **Lack of response to Vedolizumab in UC patients is not due to $\alpha 4\beta 7$ unoccupied integrin.**
- **Vedolizumab diminishes the total number of lymphocytes in the intestine without affecting their numbers in blood. This might explain the safety profile of Vedolizumab in comparison to other drugs used in IBD.**
- **Vedolizumab has a large effect on intestinal recirculating populations like CD4⁺ T cells without affecting plasma cells, despite full occupancy of $\alpha 4\beta 7$ in all populations.**
- **Inflammation reduces the presence of $\alpha E\beta 7$ + cells in the intestine of UC patients. Vedolizumab treatment does not affect this population, either in the epithelium or in the lamina propria.**

IBD Unit-Hospital Clínic Barcelona



Gastroenterology Department- Hospital Mutua Terrassa- Barcelona



Thank you for your attention!

