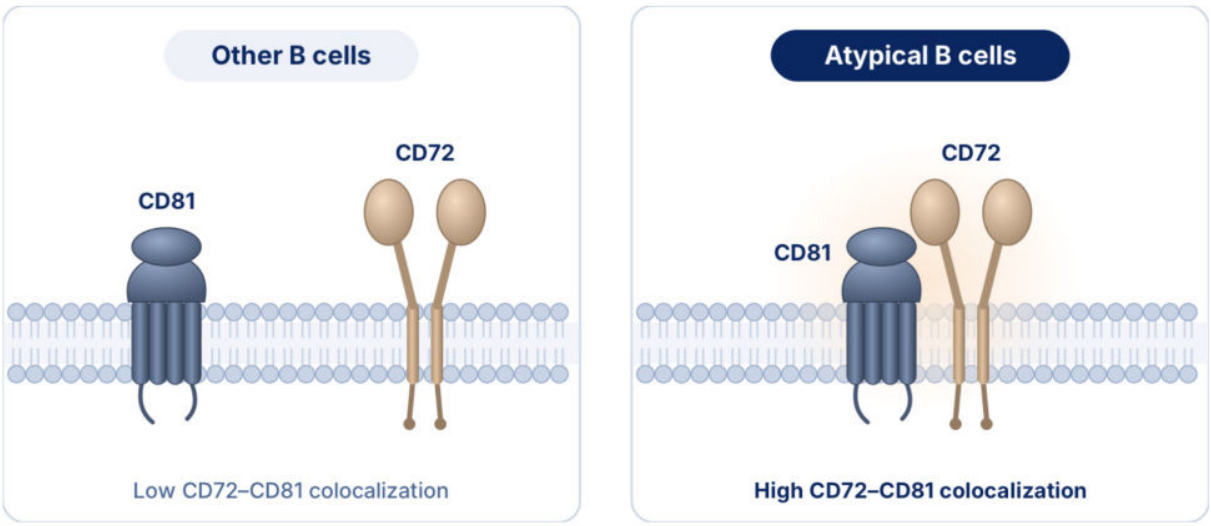
Atypical B cells in rheumatoid arthritis place the inhibitory receptor CD72 next to CD81

Caroline Grönwall's group (Karolinska Institutet) found that atypical CD11c-high CD21-low B cells are more common in Rheumatoid Arthritis (RA) and that these cells have a distinct surface architecture.



WHAT THE STUDY FOUND

1. **Cell identification.** PNA resolved 8 B-cell subsets that matched flow, including a CD11c-high CD21-low cluster in every donor.
2. **CD72 sits closer to CD81.** CD72–CD81 colocalization was highest in CD11c-high CD21-low B cells, and higher in RA than in healthy donors.
3. **Primed for T-cell help.** On atypical B cells, MHC class II, which presents antigen to T cells, sat close to proteins that help B cells engage T cells, such as CD40 and CD84.

WHY IT MATTERS

Synovial CD11c+ CD21− B cells respond strongly to BCR signals. The authors propose that the inhibitory brake of CD72 depends not only on how much CD72 a cell expresses, but on where it sits.

Profile B cell subsets in autoimmune disease

Pixelgen Proxiome kits measure abundance, clustering and colocalization of +150 proteins per cell, in PBMC or purified cells.

Huang W, et al. Distinct synovial fluid B-cell differentiation and activation profiles in rheumatoid arthritis. bioRxiv 2026. doi: 10.64898/2026.09.24.754012. Preprint, not peer reviewed.

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