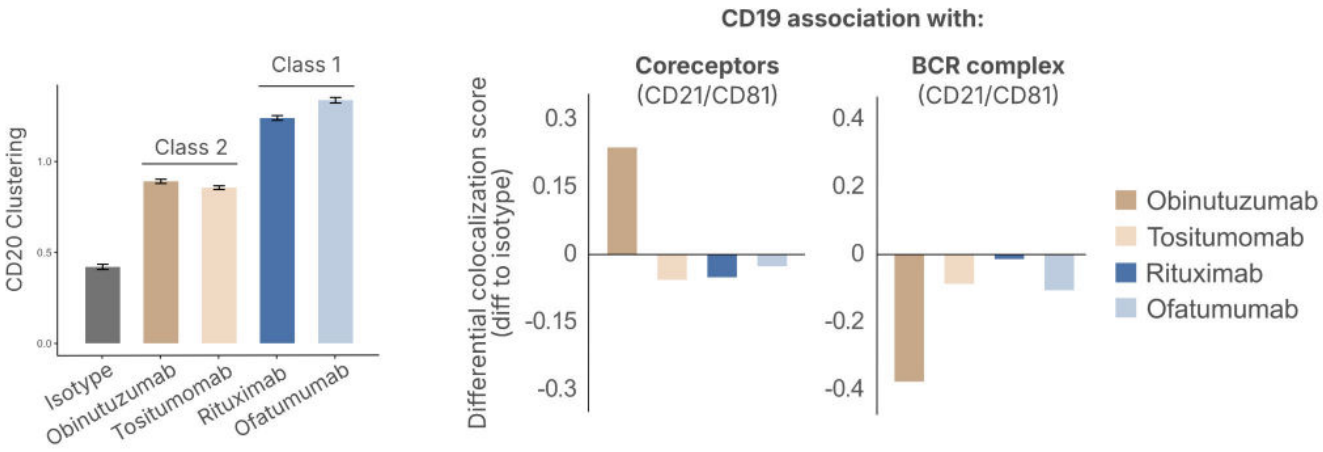
CD20 antibodies reorganize the B cell surface in different ways

CD20+ cells treated with four therapeutic CD20 antibodies (rituximab, ofatumumab, obinutuzumab and tositumomab) or an isotype control, then profiled with the Proximity Network Assay (PNA).



WHAT THE STUDY FOUND

1. **Type I antibodies clustered CD20 more.** Rituximab and ofatumumab induced stronger CD20 clustering than the type II antibodies obinutuzumab and tositumomab.
2. **Obinutuzumab also moved CD19.** Only obinutuzumab changed the organization of the B cell co-receptor CD19.
3. **Same target, different response.** The four antibodies bind CD20 but leave different spatial signatures on the cell surface.

WHY IT MATTERS

CD20 antibodies differ in clinical efficacy and in how they kill tumor cells. PNA shows how each drug reorganizes its target and neighboring proteins, providing clues into drug mechanism of action. This novel information may guide drug design and development in the future.

Study drug mode of action on the cell surface

Pixelgen Proxiome kits measure abundance, clustering and colocalization of +150 proteins per cell, before and after drug treatment.

Source: Pixelgen application data, CD20 antibody use case (unpublished).

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