

HOT TOPICS IN IMMUNOMEDICINE

Analysis of native cell-surface glycosylation patterns with molecular resolution

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The glycocalyx is emerging as a key regulator of cellular processes, yet links among nanoscale glycan organization, cell state, and cellular information display remain elusive. This is mainly attributable to the lack of appropriate tools to comprehensively study cell-surface glycan and protein organization at molecular resolution. In recent work, we have overcome this challenge by developing tailored super- and ultra resolution microscopy techniques. We have, for the first time, obtained molecular maps of glycans within the native glycocalyx, established direct links between nanoscale glycocalyx organization and cellular state, and performed spatial analysis of distinct protein glycoforms in situ.

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