

The ocular surface immune environment as a context for biomaterials interactions

Cameron K Postnikoff

In the development of novel biomaterials, the two main areas of focus are usually on safety and effectiveness – meaning, is the material well-tolerated and does it perform its desired function. The innate immune system is ripe with biomarkers that can be used to understand these roles in great detail. Using the ocular surface as a reference, what are the components of the innate immune system that can be considered? Specifically, what do cellular and protein endpoints look like, and how can we design better experiments around them? Lastly, understanding inflammation is not limited to just understanding inflammation, as there are connections to the nervous system and to obscure phenomena. Understanding the innate immune environment is pivotal for understanding biomaterials interactions, but its complexity demands more sophisticated data analysis methods.