Flow Post-its
Barbara Oliveira

Fc Block

Feb 2020

An **antibody** or **immunoglobulin** is a Y-shaped protein produced by plasma cells (Fig.1) that serve a variety of immunological functions.

The antibody recognizes a specific structure called an **antigen** (i.e cell surface marker or pathogen), via the *unique* fragment antigen-binding (**Fab**) region. The fragment crystallizable (**Fc**) region can interact with cell surface receptors (**Fc receptors**) for a variety of biological functions.

Fc receptors can be found on subsets such as: B lymphocytes, dendritic cells, monocytes, macrophages, NKs, neutrophils, eosinophils, human platelets, mast cells and basophils.

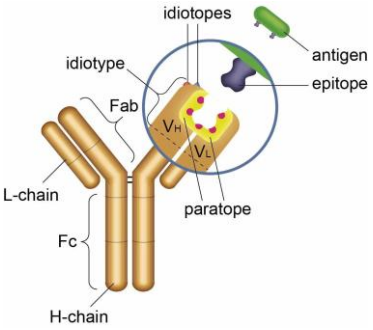


Fig.1 Antibody schematic
https://www.bio-rad-antibodies.com/anti-idiotypic-antibody.html

The binding between the Fc region of an antibody and the Fc receptors on cells can lead to false positives and statistically incorrect data (Fig.2).

To prevent this unwanted binding, **Fc blocking reagents** must be added to ensure that only antigen-specific binding is observed.

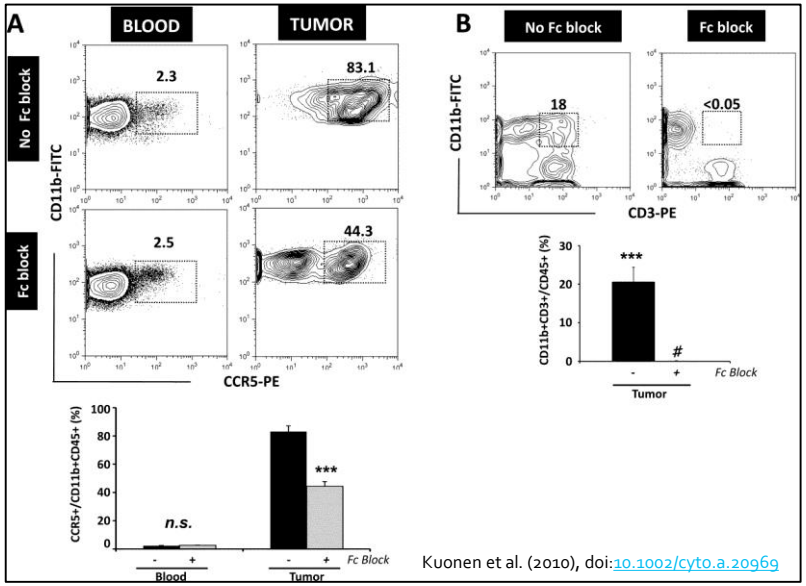
The most common Fc blocking reagents are CD16 (FcγRIII) and CD32 (FcRγII). Human Fc blocking reagents also includes CD64 (FcRγI).

TIP- For best results

Normal serum (~5%) from the species in which your **primary antibody was raised** can be used when activation is not a concern.

Use purified IgG or a commercial blocking reagent **compatible with your species of interest**. For example, when working with human samples, human Fc blocking reagent is appropriate.

Incubate and **do not wash** out Fc blocking reagents before staining with specific antibodies.



Kuonen et al. (2010), doi:10.1002/cyto.a.20969

Fig.2 Blood and tumor samples are stained with and without FC block to show the clear differences in population percentages due to FC mediated binding of antibodies.