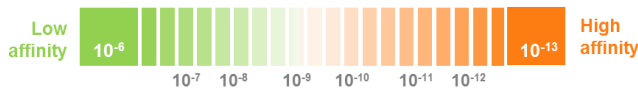




# WHAT IS THE KD OF MY ANTIBODY?

**KD** is the equilibrium dissociation constant, a calculated ratio of koff/kon, between the antibody and its antigen. The association constant (kon) is used to characterize how quickly the antibody binds to its target. The dissociation constant (koff) is used to measure how quickly an antibody dissociates from its target.

KD and affinity are inversely related. A high affinity interaction is characterized by a low KD, a fast recognizing (high Kon) and a strong stability of formed complexes (low Koff).



$10^{-4}$  to  $10^{-6}$  Micromolar ( $\mu$ M)  
 $10^{-7}$  to  $10^{-9}$  Nanomolar (nM)  
 $10^{-10}$  to  $10^{-12}$  Picomolar (pM)  
 $10^{-13}$  to  $10^{-15}$  Femtomolar (fM)

At Diaclone, we measure using the SPR (Surface Plasmon Resonance) technology and the Octet instrument. This technique can help you to rank your antibodies but also to better understand the performance of your antibodies.



For example, this ELISA development showed that the pair worked only when mAb1 is coated (Fig.1)

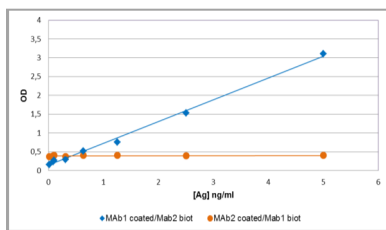


Fig. 1 : mAb1-mAb2 pairing evaluation

The determination of KD and association/dissociation profiles of antibodies by Octet permitted us to understand why the pair works only in one way.

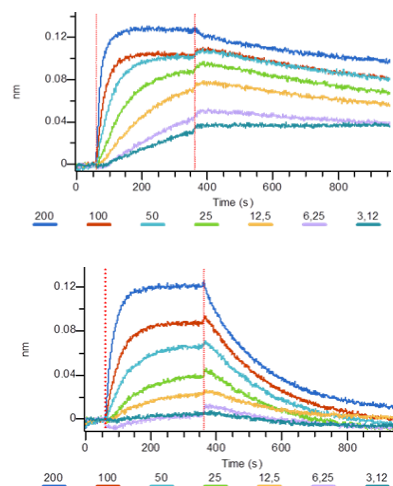


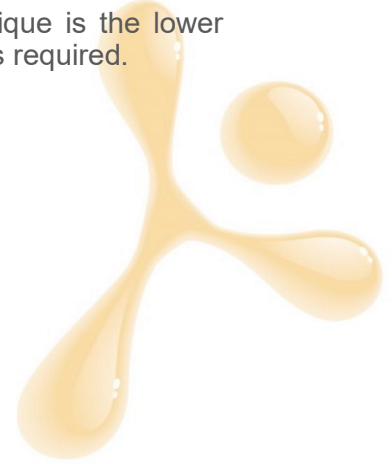
Fig. 2 : Profiles of association dissociation of mAb1 (top) and mAb2 (bottom)

The mAb2 has a quick dissociation time (Fig. 2), so, when it's coated and after all the washing steps, the antigen doesn't stay on mAb2. Using this antibody as revelation avoids this dissociation which is linked to accumulated washing steps.

Octet analysis can also help to validate the accessibility of tags (HIS, GST...), to study the interaction receptor-ligand and the potential inhibition of interaction with an antibody, and to perform epitope binning (also known as epitope mapping or pairing).

The advantage of Octet compared to the highly popular Biacore technique is the lower price, the rapid execution of experiments and the small amount of proteins required.

**Whatever the interaction to study, Octet is a valuable tool.**



### Use Diaclone's expertise to further characterize your antibody

The Octet technology is fully integrated into our custom monoclonal antibody development so that it can be implemented to further study monoclonal antibody candidates.

A large range of custom services, dedicated to your needs:

- **Biological activity:** agonist or antagonist, secretion enhancer, blocking signal transduction, cellular growth activation or inhibition,....or any new model to design
- **Effector activity:** ADCC, ADCP or CDC
- **Antibody applications:** ELISA, Western Blotting, Flow cytometry...
- **Antibody labeling**

**Contact us to discover how Diaclone can support your activity - [info@diaclone.com](mailto:info@diaclone.com)**