Anti-StayGold, AlpSdAbs® VHH(ATTO488 ×4)

Summary

Code	082-101-017
Immunogen	StayGold fusion protein
Host	Alpaca pacous
Isotype	VHH domain of alpaca IgG2b/2c
Conjugate	ATTO488(Ex=499nm, Em=520nm), 2 moles ATTO488 per mole VHH
Specificity	StayGold
Cross-Reactivity	Recognizes StayGold, mStayGold and mBaojin variants. Does not cross-react with other proteins.
Purity	Recombinant Expression and Affinity purified
Concentration	1mg/ml
Formation	Liquid, 10mM PBS (pH 7.5), 0.05% sucrose, 0.1% trehalose, 0.01% proclin300, 50% Glycerol
Storage	Store at –20 °C(Avoid freeze / thaw cycles) , protect from light

Description

Anti-StayGold, AlpSdAbs® VHH(ATTO488 ×4) is designed for detecting StayGold fusion proteins in super-resolution microscopy techniques specifically.. Anti-StayGold, AlpSdAbs® VHH(ATTO488 ×4) is based on recombinant, single domain antibodies to StayGold coupled to ATTO488. Based on immuno-electrophoresis and/or ELISA, Anti-StayGold, AlpSdAbs® VHH(ATTO488 ×4) detects the StayGold selectively, no reactivity with other proteins.

Background

VHH are single-domain antibodies derived from the variable regions of heavy chain of Camelidae immunoglobulin. The size of VHH is extremely small(<15KDa) compared to other forms of antibody fragment, which significantly increase the permeability of VHH. Thus VHH is considered of great value for research, diagnostics and therapeutics.

Standard immunodetection approaches use typically a primary antibody (1.Ab) which binds the protein of interest (POI) and a secondary antibody (2.Ab) that binds to the 1.Ab and carries a detection element. The complex formed by the primary antibody and the secondary antibody (1.Ab–2.Ab) is widely used because it is a cost effective and flexible approach since only the 2.Abs need to be coupled to the detection element. However, the use of this complex carries some relevant limitations. The 1.Ab–2.Ab can measure up to 30 nm, leading to a large distance between the targeted molecule and the detection element, causing the so called “linkage” or “displacement” error. While this might not influence the results in some applications (e.g. epifluorescence, ELISA or FACS), it is of major relevance for super-resolution microscopy techniques where the localization precision can be as high as 1 nm. The linkage error can be reduced by using directly labelled small affinity probes like camelid single domain antibodies (sdAbs) also known as nanobodies (Nbs), which have sizes below 3 nm.

Benefits

High lot-to-lot consistency
Increased sensitivity and higher affinity
Animal-free production

Application notes

IF/Super-resolution microscopy (iStorm, etc)
The recommended dilution ratio is 1:100-1:1000.

Dilution factors are presented in the form of a range because the optimal dilution is a function of many factors, such as antigen density, permeability, etc. The actual dilution used must be determined empirically.