Sorbent for anti-cross-reactive carbohydrate determinants (CCD) Reagent

PRODUCT OVERVIEW

Product Name	Sorbent for anti-cross-reactive carbohydrate determinants (CCD), Reagent
Full Product Name	Sorbent for anti-cross-reactive carbohydrate determinants (CCD) antibodies
Form/Format	dry powder (stabilized with 5% trehalose)
Preparation and Storage	Sorbent is shipped at room temperature. Upon arrival, it should be stored at 4° to -20°C in vertical position, avoiding all possible humidity and maintaining the vials dry. Once reconstituted, it should be aliquoted to avoid repeated freezing and thawing cycles and stored at -20ºC to -80ºC.
Reconstitution	0.94 ml of sterilised water. A final concentration of approx. 1 mg/ml will be obtained. The solubilisation of the cake should be developed for 5 min to allow a homogeneous protein solution, considering that part of the cake can be on the glass-walls of the container. The final color of the solution can be pale green.
Active Quantity	12.5 ul of sorbent (12.5 ug) have been used per 100 ul of diluted serum (dil 1:200) in ELISA assay. Quantities between 17 and 531 ug/ml in normal human sera have been described. Each end user should carry out his own titration for his particular application.
Recommended Concentration	For best performance, MBS505116 should be included as part of the sample diluent, at a recommended final concentration range of 0.125 to 5 mg/ml, depending on the serum quantity. Each end user should carry out their titration for their particular application.
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Application Notes for Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent	Some human normal sera contains IgG antibodies against mannan from various pathogenic Candida species. This makes them able to interact with CCD structures of the proteins produced in Pichia pastoris. With the addition of this sorbent, the anti-CCD antibodies will be kidnapped, so the specificity of the assay will increase (see Background below).
Related Product Information for Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent	solution of several glycoconjugates. Cross-reactive carbohydrate determinants (CCD) are glycan structures attached to proteins during post-translational modifications. In addition to the CCD structures of glycosylated proteins from plants or invertebrates, which are immunogenic (as they differ from those of human glycoproteins), there are also glycoproteins from several yeast species which have adapted to colonize human tissue. One example is the endo-saprophytic yeast Candida albicans, which can invade human tissues in immunosuppressed patients, leading to frequent nosocomial systemic infections. Among these virulence attributes critical for survival under changing environmental conditions, is the yeast cell wall containing large amounts of carbohydrates and carbohydrates covalently linked to a noncarbohydrate moiety classified as glycoconjugates, either glycoproteins or glycolipids. Despite similarities in the early steps of processing, the mature structure of glycans differs substantially between yeasts and mammals. Depending on the species, fungal high mannose glycans contain distinctive modifications, such as the addition of mannosyl phosphate and beta-linked mannose. These IgG antibodies against the ?-linked mannose are frequently present among healthy individuals without regard to age, race, or gender.
Product References and Citations for Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent	Mille C, Bobrowicz P, Trinel PA, Li H, Maes E, Guerardel Y, Fradin C, Martinez-Esparza M, Davidson RC, Janbon G, et al. Identification of a new family of genes involved in ?-1,2-mannosylation of glycans in Pichia pastoris and Candida albicans. J Biol Chem 2008. 283(15): 9724–9736. Bradford, MM. A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein dye binding. Anal Biochem. 1976, 131:499-503.
Other Notes	Small volumes of Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Sorbent for anti-cross-reactive carbohydrate determinants (CCD) purchase	MBS505116 is a reagent targeting Sorbent for anti-cross-reactive carbohydrate determinants (CCD). Also known as Sorbent for anti-cross-reactive carbohydrate determinants (CCD) antibodies.



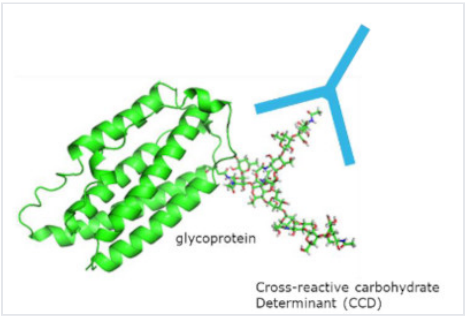
Blocker Addition of Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent

The procedure wil be as follows:Reconstitute with 0.94 ml of water, shake at RT for 5 min to obtain a homogeneous solution, considering that part of the cake can be on the container's glass walls. If the complete content is not immediately used, it can be aliquoted and stored at -20°C.



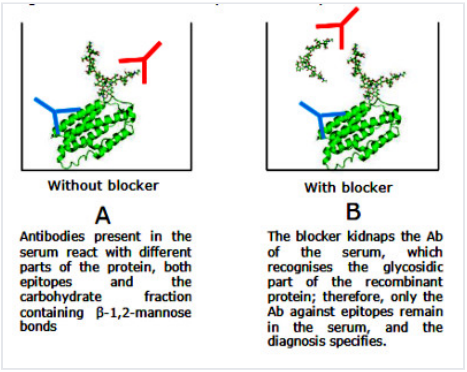
Blocker Addition of Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent

Add the needed quantity to the sample diluent to reach the final blocker concentration between 0.125 and 5 mg/ml. A larger blocker quantity will be required when the serum dilution is minor. Incubate at RT for 10 min. Afterwards, the assay can be proceeded as usual.



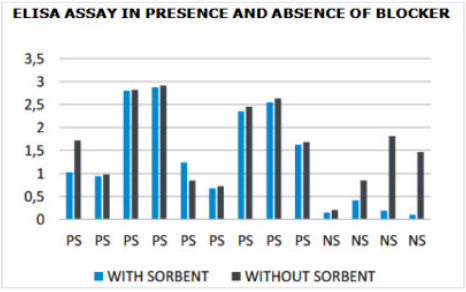
Testing Data of Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent

The glycoprotein contains a carbohydrate structure which can act as a cross-reactive carbohydrate determinant (CCD), interacting with IgG antibodies anti-mannan present in some normal human sera. The ?-1,2-linked Man residues have been established to be potent antigens for the adaptive immune response and to elicit specific infection protective antibodies. These IgG antibodies present in the normal human sera can cross-react to glycoproteins which contain these ?-1,2-linked Man residues in their glycan structure as the glycoproteins produced in Pichia pastoris (Mille et al., 2008). The methylotrophic yeast Pichia pastoris, currently reclassified as Komagataella pastoris, has become a substantial workhorse for biotechnology, especially for heterologous protein production. One of the main benefits of this system compared with bacterial systems lies in the fact that glycosylated proteins can be produced, which help to a correct folding of the secreted protein. Successful expression of many industrial enzymes as well as pharmaceutically relevant proteins has rendered the methylotrophic yeast P. pastoris one of the most suitable and powerful protein production host systems, and without doubt, the currently most inexpensive eukaryotic expression system in market. The blocker eliminates anti-CCD IgG antibodies from patient serum, which increases the specificity of the result. The use of the anti-CCD-blocker IgG only is indicated when antibodies against CCD structures are present in the patient serum.



Testing Data of Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent

As some human normal sera contains IgG antibodies against mannan, they can interact with the CCD structures of the proteins produced in Pichia (A). With addition of the blocker, the anti-CCD antibodies will be kidnapped, and the specificity of the assay will increase.



Testing Data of Sorbent for anti-cross-reactive carbohydrate determinants (CCD) reagent

Indirect IgG ELISA assay was performed with SAG1 of T. gondii (Please inquire) produced in P. pastoris. The coating was carried out with 1 ug/ml of protein. The assays were performed with (blue) and without (grey) blocker incubation. PS means positive serum and NS means negative serum.

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