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Product	Soluble recombinant CD38
Recombinant Protein	srCD38
Product Code	9506

Recombinant blood group proteins

Detection and identification of clinically significant blood group specific antibodies in patients requiring blood transfusion can be difficult if clinically irrelevant antibodies or therapeutic antibodies to high frequency antigens are also present. Soluble recombinant (sr) proteins with blood group antigen activity can be used to inhibit haemagglutination by these 'nuisance' antibodies, allowing identification of underlying clinically significant antibodies[4,5]. sr proteins are pre-incubated with patient serum or plasma before addition of the inhibited sample to panel red blood cells in either gel or tube indirect antiglobulin tests (IAT).

Soluble recombinant CD38

CD38 (cyclic ADP ribose hydrolase) is a widely expressed type II membrane glycoprotein present on the surface of red cells. The *CD38* gene is located on chromosome 4[1,2,3]. srCD38 comprises the extracellular domain of human CD38. CD38 is highly expressed in haematological malignancies, particularly multiple myeloma, and is a target for monoclonal antibody immunotherapy. Anti-CD38 immunotherapy (for example Daratumumab and Isatuximab) can interfere with routine serological and compatibility testing as the antibodies also bind to CD38 on red blood cells. Plasma/serum samples from patients undergoing anti-CD38 immunotherapy may be pan-reactive with red cell panels used for antibody screening and identification, and give a positive auto-antibody control in the IAT. Pan-reactivity can mask the presence of clinically significant antibodies, but can be inhibited by adsorption of the therapeutic antibody with srCD38[4,5,6]. srCD38 has no reactivity with clinically significant red cell antibodies. An alternative strategy for preventing therapeutic anti-CD38 interference in serology is treatment of panel red cells with dithiothreitol (DTT) which disrupts protein disulfide bonds. This prevents the binding of therapeutic anti-CD38 to the red blood cell surface, but also inactivates other antigens such as Kell[6]. Blood transfusion laboratories should be notified when sending samples from patients on anti-CD38 immunotherapy.

References

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