[PTL6] WO 2010/054403
[PTL7] WO 95/29697
[PTL8] WO 2002/30985
[PTL9] WO 2004/007553
[PTL10] WO 2010/015608
[PTL11] WO 2009/125825
[PTL12] WO 2011/122011
[PTL13] WO 2011/111007

Non Patent Literature

[0019]

[NPL1] Holers et al., Immunol. Rev. 223:300-316 (2008)
[NPL2] Dmytrijuk et al., The Oncologist 13(9):993-1000 (2008)
[NPL3] Yeung et al., J Immunol. 182(12): 7663-7671 (2009)
[NPL4] Datta-Mannan et al., J Biol. Chem. 282(3):1709-1717 (2007)
[NPL5] Dall'Acqua et al., J. Immunol. 169(9):5171-5180 (2002)

Summary

[0020]

The disclosure provides anti-C5 antibodies and methods of using the same. In one aspect, there is provided an isolated monoclonal antibody that binds to C5, wherein the antibody binds to an epitope within a fragment consisting of amino acids 33-124 of the beta chain (SEQ ID NO: 40) of C5 with a higher affinity at pH7.4 than at pH5.8, and wherein the epitope comprises at least one fragment selected from the group consisting of amino acids 47-57, 70-76, and 107-110, and wherein the antibody competes for binding C5 with an antibody comprising a VH (SEQ ID NO: 1) and VL (SEQ ID NO: 11) pair of antibody CFA0305. In another aspect, there is provided a pharmaceutical formulation comprising the antibody of the present invention a pharmaceutically acceptable carrier.

[0021]

In some examples, an isolated anti-C5 antibody disclosure binds to an epitope within the beta chain of C5. In some examples, an isolated anti-C5 antibody of the present disclosure binds to an epitope within the MG1-MG2 domain of the beta chain of C5. In some examples, an isolated anti-C5 antibody of the present disclosure binds to an epitope within a fragment consisting of amino acids 33-124 of the beta chain (SEQ ID NO: 40) of C5. In some examples, an isolated anti-C5 antibody of the present disclosure binds to an epitope within the beta chain (SEQ ID NO: 40) of C5 which comprises at least one fragment selected from the group consisting of amino acids 47-57, 70-76, and 107-110. In some examples, an isolated anti-C5 antibody of the present disclosure binds to an epitope within a fragment of the beta chain (SEQ ID NO: 40) of C5 which comprises at least one amino acid residue selected from the group consisting of Glu48, Asp51, His70, His72, Lys109, and His110 of SEQ ID NO: 40. In further examples, the antibody binds to C5 with a higher affinity at neutral pH than at acidic pH. In further examples, the antibody binds to C5 with a higher affinity at pH7.4 than at pH5.8. In another example, an isolated anti-C5 antibody of the present disclosure binds to the same epitope as an antibody described in Table 2. In further examples, the antibody binds to the same epitope as an antibody described in Table 2 with a higher affinity at pH7.4 than at pH5.8. In a further example, the anti-C5 antibody of the present disclosure binds to the same epitope as an antibody described in Tables 7 or 8. In further examples, the antibody binds to the same epitope as an antibody described

Claims

1. An isolated monoclonal antibody that binds to C5, wherein the antibody binds to an epitope within a fragment consisting of amino acids 33-124 of the beta chain (SEQ ID NO: 40) of C5 with a higher affinity at pH7.4 than at pH5.8, and wherein the epitope comprises at least one fragment selected from the group consisting of amino acids 47-57, 70-76, and 107-110, and wherein the antibody competes for binding C5 with an antibody comprising a VH (SEQ ID NO: 1) and VL (SEQ ID NO: 11) pair of antibody CFA0305.

2. The antibody of claim 1, wherein the antibody binds to an epitope within a fragment of the beta chain (SEQ ID NO: 40) of C5 which comprises at least one amino acid selected from the group consisting of Glu48, Asp51, His70, His72, Lys109, and His110.

3. The antibody of any one of claims 1 to 2, which inhibits activation of C5.

4. The antibody of any one of claims 1 to 3, which inhibits activation of C5 variant R885H.

5. The antibody of any one of claims 1 to 4, which is a human, humanized, or chimeric antibody.

6. The antibody of any one of claims 1 to 5, which is an antibody fragment that binds to C5.

7. The antibody of any one of claims 1 to 5, which is a full length IgG1 or IgG4 antibody.

8. A pharmaceutical formulation comprising the antibody of any one of claims 1 to 7 and a pharmaceutically acceptable carrier.