### Characteristics of Blood Group Antibodies

#### Antibody Characteristics

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<th>Antibody</th>
<th>Characteristics</th>
<th>Associated with</th>
<th>Clinical Diagnosis</th>
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</thead>
<tbody>
<tr>
<td>Anti-A,B</td>
<td>IgM 99.9, IgG 99</td>
<td>PCH, HDFN, AA,</td>
<td>Autoantibody may</td>
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<td></td>
<td></td>
<td>hemolytic Reactions</td>
<td>cause severe</td>
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<td></td>
<td>as a biphasic autohemolysin</td>
<td>and moderate</td>
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<td>in PCH, detected by</td>
<td>hemolysis</td>
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<td></td>
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<td>the Donath-Landsteiner</td>
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<td></td>
<td></td>
<td>test</td>
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### Associated with

- **PCH**: Paroxysmal cold hemoglobinuria
- **HDFN**: Hemolytic disease of the fetus and newborn
- **AA**: Autoimmune hemolytic anemia

### Clinical Diagnosis

- **Autoantibody**: Autoantibody may cause severe and moderate hemolysis in PCH, detected by the Donath-Landsteiner test.
- **Hemolytic Reactions**: Autoantibody may cause severe and moderate hemolysis in PCH, detected by the Donath-Landsteiner test.

### Additional Information

- **HDFN**: Hemolytic disease of the fetus and newborn
- **PCH**: Paroxysmal cold hemoglobinuria

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**Legend**

- **Characteristics**
  - IgM: Immunoglobulin M
  - IgG: Immunoglobulin G

**References**

- Bio-Rad Laboratories - Clinical Diagnostics Group
- Wiley-Blackwell; 2014

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**Bibliography**

- Anti-s MNS4
- Anti-N MNS2
- Anti-Kpa KEL3
- Anti-H H1
- Anti-Lea LE1
- Lewis (ISBT No 007) Blood Group System
- Anti-Csa COST1
- Cost (ISBT No 205) Blood Group Collection
- Anti-Lan LAN1
- I (ISBT No 027) Blood Group System
- Anti-JMH JMH1
- John Milton Hagen, JMH (ISBT No 026) Blood Group System
- Anti-Ch1 CH/RG1
- Anti-Coa CO1
- Anti-Xga XG1
- Anti-Fya FY1
- Anti-Dia DI1
- Anti-Dib DI2
- Anti-Ytb YT2
- Anti-PP1Pk
- Anti-Rg1 CH/RG11
- Anti-E RH3
- Anti-Cw RH8
- ABO (ISBT No 001) & H Blood Group (ISBT No 018) Systems

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**Note**

- Germ line gene expression varies, but this variation is inherited, and at least partially dependent on the zygosity and parental origin of the genes.
- Some examples are C-alleles such as Cw- and Cw-1.
- Most Cw+ are C+; rare examples are C-.
- Some examples are HLA antibodies.
- There are two kinds of anti-Leb: anti-LebH (LE4), reacting with group O and A2
- There may be a need for transfusions of red cells to prevent hemolytic disease of the newborn.
- Most Cw+ are C+; rare examples are C-.
- Anti-Lea and anti-Leb in conjunction are frequently naturally occurring antibodies.