

Datasheet for 103-4139**Chicken Red Blood Cell RBC Antibody****Overview**

Description:	Anti-Chicken Red Blood Cell (RBC) (RABBIT) Antibody - 103-4139
Item No.:	103-4139
Size:	2 mL
Applications:	Agglutination, Biochemical Assay, IF, IHC, Multiplex
Host Species:	Rabbit

Product Details

Background:	Anti-CHICKEN Red Blood Cell Antibody may be used in hemagglutination assays. Haemagglutination assay or HA is a method of quantification for viruses or bacteria by hemagglutination. Some viral families and many bacteria have envelope or surface proteins which are able to agglutinate (stick to) human or animal red blood cells (RBC) and bind to N-acetylneuraminic acid. As each of the agglutinating molecule attaches to multiple RBCs, a lattice-structure will form. Normally, a virus dilution (e.g. 2-fold from 1:4 to 1:4096) will be applied to an RBC dilution (e.g. 0.1% to 0.7% in steps of 0.2%) for approx. 30 min, often at 4° C, otherwise viruses with neuraminidase activity will detach the virus from the RBCs. Then the lattice forming parts will be counted and the titer calculated. The titer of a hemagglutination assay is determined by the last viable "lattice" structure found. This is because it is at the point where, if diluted anymore, the amount of Virus particles will be less than that of the RBCs and thus not be able to agglutinate them together. Anti-CHICKEN Red Blood Cell Antibody is used to sensitize erythrocytes and quantitate agglutination.
Synonyms:	Anti-RBC antibody, Red Blood Cell Antibody, Antibody for hemagglutination, rabbit anti RBC, rabbit anti-chicken Red Blood Cells (RBC), haemolysin, hemolysin, erythrocytes sensitizing agent
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	Antiserum

Target Details

Immunogen Type:	Other
Immunogen:	Chicken washed pooled Red Blood Cells (RBC)

Purity/Specificity: This product was prepared from polyspecific antiserum by a delipidation and defibrination.

Relevant Links:

- [103-4139 SDS](#)

Application Details

Tested Applications: Agglutination

Suggested Applications: Biochemical Assay, IF, IHC, Multiplex (Based on references)

Application Note: Tested for agglutination of cells on titer plates. Each laboratory should determine an optimum working titer for use in its particular application. Other applications have not been tested but use in such assays should not necessarily be excluded.

Assay Dilutions: All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.

Tissue Data

Tissue Type: Red Blood Cells

Formulation

Physical State: Lyophilized

Concentration: 60 mg/mL by Refractometry

Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

Sterility: Non-sterile

Preservative: 0.01% (w/v) Sodium Azide

Stabilizer: None

Reconstitution Volume: 2.0 mL

Reconstitution Buffer: Restore with deionized water (or equivalent)

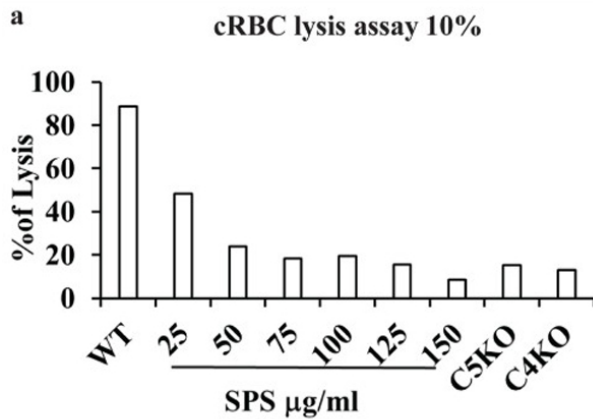
Shipping & Handling

Shipping Condition: Ambient

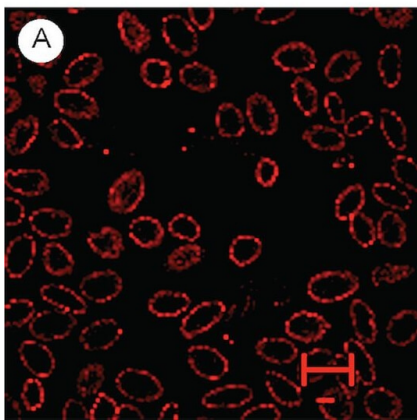
Storage Condition: Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Expiration: Expiration date is one (1) year from date of receipt.

Images



Anti-RBC



Agglutination

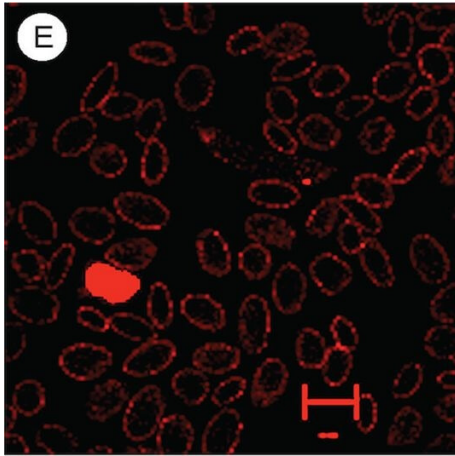
Assessment of lectin and classical pathway complement activity in Masp3^{-/-} mouse plasma.

(a) Sodium polyanethole sulfonate (SPS) dose-dependently inhibited mouse classical pathway complement activity in a chicken red blood cell (cRBC) hemolytic assay. Percentage of cRBC lysis was normalized to a cRBC sample completely lysed by hypotonic shock in double-distilled water. Mouse serum was diluted to 10% and incubated with Ab-sensitized chicken RBCs (p/n R401-0050) at 37°C for 30 min. Ab-sensitized chicken RBCs were prepared by incubating the cells with rabbit anti-chicken RBC Ab (p/n 103-4139) at 150 $\mu\text{g/ml}$ on ice for 1 h.

Fig 2. PMID: 36988282.

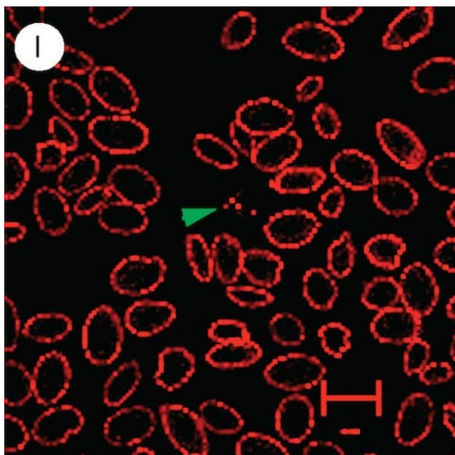
Immunocytochemistry

Confocal images of infected chicken blood cells stained with anti-red blood cell antibodies. Anti-RBC, images stained with rabbit anti-chicken red blood cell antibody 103-4139; DIC, differential interference contrast images; Hoechst, Hoechst dye staining of nuclei (DNA); Merged, merged images of anti-RBC, DIC, and DAPI. (A-H) Two cells infected with *L. sabraezesi* gametocytes have some red dots (yellow arrowheads) that appear to be within the cytoplasm of the host cells. (E-H) A strongly stained white cell (grey arrowheads) that has two nuclei and rough granules in the cytoplasm, suggesting heterophils, monocytes, macrophages, or eosinophils. (I-L) A small cell that has a round nucleus and red dots similar (green arrowheads) to those seen in the infected cells. The small size of the cell suggests that it is likely a thrombocyte. The red ruler in each image indicates 10 μm . Figure provided by CiteAb. Source: PLoS One, PMID: 26218846.



Immunocytochemistry

Confocal images of infected chicken blood cells stained with anti-red blood cell antibodies. Anti-RBC, images stained with rabbit anti-chicken red blood cell antibody 103–4139; DIC, differential interference contrast images; Hoechst, Hoechst dye staining of nuclei (DNA); Merged, merged images of anti-RBC, DIC, and DAPI. (A-H) Two cells infected with *L. sabraezesi* gametocytes have some red dots (yellow arrowheads) that appear to be within the cytoplasm of the host cells. (E-H) A strongly stained white cell (grey arrowheads) that has two nuclei and rough granules in the cytoplasm, suggesting heterophils, monocytes, macrophages, or eosinophils. (I-L) A small cell that has a round nucleus and red dots similar (green arrowheads) to those seen in the infected cells. The small size of the cell suggests that it is likely a thrombocyte. The red ruler in each image indicates 10 μm . Figure provided by CiteAb. Source: PLoS One, PMID: 26218846.

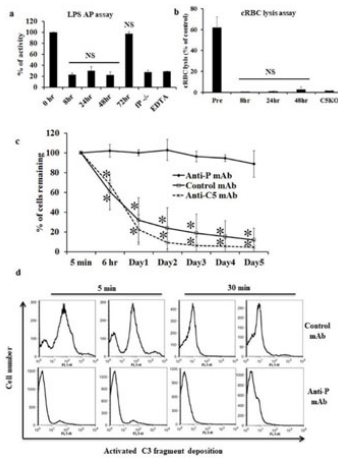


Immunocytochemistry

Confocal images of infected chicken blood cells stained with anti-red blood cell antibodies. Anti-RBC, images stained with rabbit anti-chicken red blood cell antibody 103–4139; DIC, differential interference contrast images; Hoechst, Hoechst dye staining of nuclei (DNA); Merged, merged images of anti-RBC, DIC, and DAPI. (A-H) Two cells infected with *L. sabraezesi* gametocytes have some red dots (yellow arrowheads) that appear to be within the cytoplasm of the host cells. (E-H) A strongly stained white cell (grey arrowheads) that has two nuclei and rough granules in the cytoplasm, suggesting heterophils, monocytes, macrophages, or eosinophils. (I-L) A small cell that has a round nucleus and red dots similar (green arrowheads) to those seen in the infected cells. The small size of the cell suggests that it is likely a thrombocyte. The red ruler in each image indicates 10 μm . Figure provided by CiteAb. Source: PLoS One, PMID: 26218846.

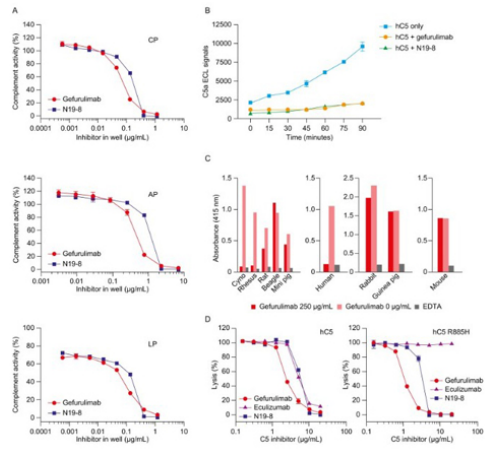
Figure

Therapeutic efficacy of anti-human P mAb 19.1 in a murine model of extravascular hemolysis: Pharmacodynamics of mAb 19.1 in hP transgenic mice. Each mouse was treated with 0.5 mg mAb 19.1 (n=3 mice). Serum samples were collected before and at various time points after mAb treatment and assessed for LPS-dependent AP complement activity. At this dosage of mAb 19.1, AP complement activity was suppressed to background (P–/–) level for 2 days. EDTA: time 0 sample with EDTA (20 mM) added. NS, non-significant



comparing 8, 24 and 48 hr samples with fP-/- or EDTA-treated serum, or comparing 72 hr sample with 0 hr sample. One-way ANOVA. b: Pharmacodynamics of anti-mouse C5 mAb (BB5.1) in hP transgenic mice. Each mouse was treated with 1mg of anti-mouse C5 mAb (n=3). Serum samples were collected before and at various time points after mAb treatment and assessed for lytic activity using antibody-sensitized chicken RBCs. C5 knockout (KO) mouse serum was used as a control for C5 inhibition. Percentage of chicken RBC (cRBC) lysis was normalized to a sample completely lysed by hypotonic shock in double distilled water. * p<0.0001, NS: non-significant compared with C5KO serum. One-way ANOVA. c: Effect of anti-hP mAb 19.1 on the survival of transfused CFSC-labeled DAF-/-/CFSC-/- mouse erythrocytes in hP- transgenic mice. Recipient mice were treated with anti-hP mAb 19.1 (n=4) or an isotype control mAb (n=4) or anti-mouse C5 mAb (n=3) 6 hours prior to red blood cell transfusion and blood samples were taken at 5 min, 6 hrs and then daily for 5 days. The percentage of CFSC-labeled red blood cells was measured by FACS and normalized to that determined at 5 min (100%). Transfused DAF-/-/CFSC-/- mouse red blood cells were rapidly eliminated in control mAb- or anti-C5 mAb-treated hP transgenic mice but such an outcome was prevented by mAb 19.1 treatment. * p< 0.001, Two-way ANOVA. d: FACS analysis of activated C3 fragment deposition on DAF-/-/CFSC-/- RBCs 5 and 30 min after their transfusion into control mAb- or mAb 19.1-treated hP-Tg/P-/- mice (representative data from two recipient mice are shown). At both time points, C3 fragment deposition was significantly higher on RBCs transfused into control mAb-treated than mAb 19.1-treated hP-Tg/P-/- mice. The reason for the marked reduction in C3 fragment deposition on RBCs in control mAb-treated hP-Tg/P-/- mice between 5 and 30 min is unknown, but could be caused by C3 fragment degradation to C3d or shedding from the cell surface or rapid removal of the C3-opsonized cells. Data in a-c are presented as mean (SD) with indicated n numbers.

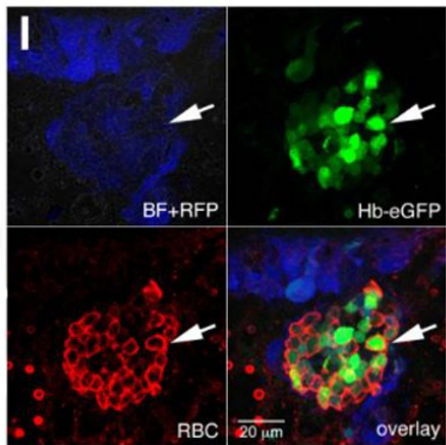
Antibody-sensitized chicken RBC (p/n R401-0050) prepared by incubating the cells with a rabbit anti-chicken RBC antibody (p/n 103-4139). Fig 4. PMID: 29898960.



Agglutination

Hemolysis involving the classical complement pathway using Anti-Chicken Red Blood Cell.

Gefurulumab potently and dose-dependently inhibits terminal complement activation. (A) Wieslab assay of the inhibition of membrane attack complex (MAC) formed by classical (CP), alternative (AP) and lectin (LP) pathways by human serum, in comparison with the IgG based C5-blocking mAb N19-8. (B) Inhibition of C5a released by C5 convertase formed on zymosan particles. Assays are in both the absence or presence of 10 µg/mL of gefurulumab or the IgG based C5-blocking mAb N19-8. (C) Species selectivity for inhibition of CP hemolysis by gefurulumab showing blockade only of primate CP activity. (D) Blockade by gefurulumab of CP hemolysis supported by either native C5 (left panel) or recombinant C5 containing the R885H substitution present in a rare C5 variant (right panel), in comparison with eculizumab and N19-8. Fig. 5. PMID: 38142486



Immunohistochemistry

Characterization of the Hb-eGFP-positive cell population. Chick embryos were processed for cVEGFR2 whole mount co-electroporated at HH3-4 with the Hb-eGFP reporter construct (PCR2) and the ubiquitous reporter pCAGGS-RFP and imaged as cryosectioned through the yolk sac region at HH11. Top left: bright field and RFP (in blue); top right: Hb-eGFP green fluorescence; bottom left: RBC; bottom right: overlay of bright field and fluorescence images. At later stages, Hb-eGFP fluorescence is detected in cVEGFR2-positive endothelial cells (H; arrow) and blood cells or erythroblasts (I; arrows), but not in smooth muscle cells (J; arrowheads). Fig 2. PMID: 22204590.

References

- Jindal S et al. Characterization of the bispecific VHH antibody gefurulumab (ALXN1720) targeting complement component 5, and designed for low volume subcutaneous administration. *Mol Immunol.* (2024)
- Gullipalli D et al. MASP3 deficiency in mice reduces but does not abrogate alternative pathway complement activity due to intrinsic pro-factor D activity. *J Immunol.* (2023)
- Cone J et al. Characterization of multivalent complexes formed in the presence of more than one conventional antibody to terminal complement component C5. *PLoS One* (2023)
- Kusakabe J et al. Complement 5 Inhibition Ameliorates Hepatic Ischemia/reperfusion Injury in Mice, Dominantly via the C5a-mediated Cascade. *Transplantation.* (2020)
- Fukuzawa T et al. Long lasting neutralization of C5 by SKY59, a novel recycling antibody, is a potential therapy for complement-mediated diseases. *Sci Rep.* (2017)
- Zhao et al. The Gametocytes of Leucocytozoon sabraezesi Infect Chicken Thrombocytes, Not Other Blood Cells. *PLoS One* (2015)
- Teixeira V et al. Targeting the hemangioblast with a novel cell type-specific enhancer. *BMC Dev Biol.* (2011)
- Shin M et al. Notch mediates Wnt and BMP signals in the early separation of smooth muscle progenitors and blood/endothelial common progenitors. *Development.* (2009)

Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.