**PRODUCT INFORMATION SHEET**

**Monoclonal antibodies detecting human antigens**

### CD64

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURE</td>
<td>IQP-568P-ASR</td>
<td>▼ 100 tests</td>
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<tr>
<td>FITC</td>
<td>IQP-568F-ASR</td>
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<td>R-PE</td>
<td>IQP-568R-ASR</td>
<td>▼ 100 tests</td>
</tr>
<tr>
<td>CyQ</td>
<td>IQP-568C-ASR</td>
<td>▼ 100 tests</td>
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</tbody>
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ASR Analyte Specific Reagents. This reagent is labeled "ASR" for distribution throughout the Americas. Analytical and performance characteristics are not established. The product comply with the ASR definitions.

### Description

**Clone** 22  
**Isotype** Murine IgG1  

**Specificity**

CD64 reacts with the Fc gamma receptor 1 (FcγR1), a glycoprotein with a molecular weight of 72kDa. The antigen is a high-affinity receptor for IgG and is able to bind human IgG1 and IgG3. The antigen is expressed on macrophages, monocyte and interferon γ (IFN-γ) and Granulocyte Colony Stimulating Factor (G-CSF) stimulated neutrophils. The antibody binds to a CD64 epitope distinct from the ligand-binding site and from the clone 32.2 antibody to CD64 epitope. It shows especially high affinity binding to human mononuclear phagocytes and polymorphonuclear leukocytes exposed to IFN-γ or G-CSF. Its binding is not blocked in the presence of human IgG or immune complexes.

**Antigen distribution**

The CD64 antigen is one of three Fc receptors for immunoglobulins, including human FcyRII (CD32 antigen) and human FcyRIII (CD16 antigen), present on the surface of leucocytes. While FcyRII and FcyRIII are low-affinity receptors for immunoglobulin, FcyRI binds with high-affinity. Structurally, the CD64 antigen possesses an extracellular region of 292 amino acids with three C2 set Ig-like domains, a 21-amino acid transmembrane region, and a charged cytoplasmic tail of 61 amino acids. Stable expression of FcyRI requires co-expression of the IgG-binding α-chain as an oligomeric complex with the FcR γ-chain homodimer. CD64, a key receptor in the development of immune responses, has a dual role as a low-affinity receptor for IgG3 and a high-affinity receptor for IgG2a linking innate and adaptive immunities.

**Summary**

The CD64 antigen is expressed on monocytes, macrophages, at low levels on polymorphonuclear neutrophils (PMNs), and on a subpopulation of circulating dendritic cells. CD64 is an early granulomonocytic lineage marker on CD34+ hematopoietic progenitors. Soluble human FcyRI molecules have been found in human serum. Three genes have been characterized for FcyRI, each gene consisting of six exons, spanning 9.5 kilobases, and localized to chromosome 1.

**Applications** Flow Cytometry

**HLDA Workshop**

The 22 monoclonal antibody has been assigned to the CD64 cluster of differentiation at the 4th HLDA Workshop on Human Leukocyte Differentiation Antigens in Vienna, Austria, in 1989.

**Representative data**

Staining with clone 22 (CD64) monoclonal antibodies is illustrated by flow cytometry analysis of blood cells. Direct staining was performed using 10 μl of the FITC-conjugated antibody and 100 μl of blood sample.
Handling and Storage
Antibodies are supplied either as 100 tests per vial (1 ml) for singles, or 50 tests per vial (1 ml) for dual and triple combinations. They are supplied in 0.01 M sodium phosphate, 0.15 M NaCl; pH 7.3, 0.2% BSA, 0.09% sodiumazide (NaN₃). Store the vials at 2-8 °C. Monoclonal antibodies should be protected from prolonged exposure to light. Reagents are stable for the period shown on the vial label when stored properly.

Warranty
Products sold hereunder are warranted only to conform to the quantity and contents stated on the label at the time of delivery to the customer. There are no warranties, expressed or implied, which extend beyond the description on the label of the product. IQ Products is not liable for property damage, personal injury, or economic loss caused by the product.

Characterization
To ensure consistently high-quality reagents, each batch of monoclonal antibody is tested for conformance with characteristics of a standard reagent. Representative flow cytometric data is included in this data sheet.

Warning
All products contain sodium azide. This chemical is poisonous and hazardous. Handling should be done by trained staff only.

References
1 Akerley WL, Guyre PM, Davis BH (1991) Neutrophil activation through high-affinity Fc gamma receptor using a monomeric antibody with unique properties. Blood 77, 607-615.