

Datasheet: MCA4685

**BATCH NUMBER 162884**

|                      |  |
|----------------------|--|
| <b>Description:</b>  | MOUSE ANTI HUMAN CYTOCHROME B245 HEAVY CHAIN |
| <b>Specificity:</b>  | CYTOCHROME B245 HEAVY CHAIN                  |
| <b>Other names:</b>  | gp91phox                                     |
| <b>Format:</b>       | Purified                                     |
| <b>Product Type:</b> | Monoclonal Antibody                          |
| <b>Clone:</b>        | NL7  |
| <b>Isotype:</b>      | IgG1   |
| <b>Quantity:</b>     | 0.2 mg                                       |

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

|                            | Yes | No | Not Determined | Suggested Dilution |
|----------------------------|-----|----|----------------|--------------------|
| Flow Cytometry (1)         | ▪   |    |                |                    |
| Immunohistology - Frozen   | ▪   |    |                |                    |
| Immunohistology - Paraffin |     |    | ▪              |                    |
| ELISA                      | ▪   |    |                |                    |
| Immunoprecipitation        |     |    | ▪              |                    |
| Western Blotting           | ▪   |    |                |                    |
| Immunofluorescence         | ▪   |    |                |                    |

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

**(1)Membrane permeabilisation is required for this application. Bio-Rad recommends the use of Leucoperm™ (Product Code [BUF09](#)) for this purpose.**

|                        |   |
|------------------------|---|
| <b>Target Species</b>  | Human   |
| <b>Product Form</b>    | Purified IgG - liquid   |
| <b>Preparation</b>     | Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant |
| <b>Buffer Solution</b> | Phosphate buffered saline   |

|                                       |  |
|---------------------------------------|--|
| <b>Preservative Stabilisers</b>       | 0.09% Sodium Azide (NaN <sub>3</sub> )   |
| <b>Carrier Free</b>                   | Yes  |
| <b>Approx. Protein Concentrations</b> | IgG concentration 1.0mg/ml   |
| <b>Immunogen</b>                      | Cytochrome B245 solubilised in octyl-beta-glucopyranoside.   |
| <b>External Database Links</b>        | <p><b>UniProt:</b><br/> <a href="#">P04839</a>    <a href="#">Related reagents</a></p> <p><b>Entrez Gene:</b><br/> <a href="#">1536</a>    CYBB    <a href="#">Related reagents</a></p>  |
| <b>Synonyms</b>                       | NOX2   |
| <b>RRID</b>                           | AB_1963543   |
| <b>Fusion Partners</b>                | Spleen cells from immunised BALB/c were fused with cells of the 3PU1 myeloma cell line.  |
| <b>Specificity</b>                    | <p><b>Mouse anti Human Cytochrome B245 Heavy Chain antibody, clone NL7</b> recognizes the heavy chain of cytochrome B245, also known as gp91phox or NOX2, a subunit of the nicotinamide adenine dinucleotide phosphate-oxidase (NADPH oxidase). NADPH oxidase is a membrane-bound enzyme complex in neutrophils that produces the superoxide anion (O<sub>2</sub><sup>-</sup>) by transferring single electrons from NADPH inside the cell across the membrane and coupling them to molecular oxygen. Superoxide is used for the destruction of pathogens. Individuals with defects in NADPH oxidase suffer from chronic granulomatous disease, characterised by severe recurrent infections.</p> <p>The heavy chain (gp91phox), along with the light chain (p22phox) form cytochrome B245 (also known as flavocytochrome b, or Cyt b), which is always membrane-resident. Upon the appropriate stimulus, other components of NADPH oxidase (p47phox, p40phox, p67phox and Rac2) rapidly translocate from the cytosol to the cell membrane to form the complete enzyme complex. Cytochrome B245 appears to serve as a scaffold for the assembly of the other cytosolic units of the oxidase and to provide a transmembrane pathway for electrons.</p> <p>Mouse anti Human Cytochrome B245 Heavy Chain antibody, clone NL7 binds amino acids 498-506 (EKDVITGLK), a cytosolic epitope on gp91phox not accessible on intact neutrophils. It recognizes the native as well as the denatured form of the protein. Clone NL7 has an inhibitory effect on NADPH oxidase activation. Research indicates that this inhibitory effect is exerted during the initial stages of oxidase activation. The antibody does not interfere with the translocation of the cytosolic subunits of NADPH oxidase to the cell membrane.</p> |
| <b>Flow Cytometry</b>                 | Use 10ul of the suggested working dilution to label 1x10 <sup>6</sup> cells in 100ul.  |

|                                      |   |
|--------------------------------------|---|
| <b>Western Blotting</b>              | MCA4685 detects a broad band of approximately 90kDa   |
| <b>References</b>                    | <ol style="list-style-type: none"> <li>1. Burritt, J.B. <i>et al.</i> (2003) Functional epitope on human neutrophil flavocytochrome b558. <a href="#">J Immunol. 170 (12): 6082-9.</a></li> <li>2. Taylor, R.M. <i>et al.</i> (2004) Site-specific inhibitors of NADPH oxidase activity and structural probes of flavocytochrome b: characterization of six monoclonal antibodies to the p22phox subunit. <a href="#">J Immunol. 173 (12): 7349-57.</a></li> <li>3. Taylor, R.M. <i>et al.</i> (2007) Cloning, sequence analysis and confirmation of derived gene sequences for three epitope-mapped monoclonal antibodies against human phagocyte flavocytochrome b. <a href="#">Mol Immunol. 44 (4): 625-37.</a></li> <li>4. Cao, S. (2010) Fc gamma receptors are required for NF-kappaB signaling, microglial activation and dopaminergic neurodegeneration in an AAV-synuclein mouse model of Parkinson's disease. <a href="#">Mol Neurodegener. 5: 42.</a></li> <li>5. Kovács I <i>et al.</i> (2015) Reactive oxygen species-mediated bacterial killing by B lymphocytes. <a href="#">J Leukoc Biol. 97 (6): 1133-7.</a></li> </ol> |
| <b>Storage</b>                       | <p>This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.</p> <p>Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.</p>   |
| <b>Guarantee</b>                     | 12 months from date of despatch   |
| <b>Health And Safety Information</b> | Material Safety Datasheet documentation #10040 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA4685">https://www.bio-rad-antibodies.com/SDS/MCA4685</a><br>10040   |
| <b>Regulatory</b>                    | For research purposes only  |

## Related Products

### Recommended Secondary Antibodies

|   |   |
|---|---|
| Rabbit Anti Mouse IgG (STAR12...)       | <a href="#">RPE</a>   |
| Goat Anti Mouse IgG IgA IgM (STAR87...) | <a href="#">HRP</a>   |
| Goat Anti Mouse IgG (STAR76...)         | <a href="#">RPE</a>   |
| Goat Anti Mouse IgG (STAR70...)         | <a href="#">FITC</a>  |
| Goat Anti Mouse IgG (H/L) (STAR117...)  | <a href="#">Alk. Phos.</a> , <a href="#">DyLight®488</a> , <a href="#">DyLight®550</a> ,<br><a href="#">DyLight®650</a> , <a href="#">DyLight®680</a> , <a href="#">DyLight®800</a> ,<br><a href="#">FITC</a> , <a href="#">HRP</a> |
| Rabbit Anti Mouse IgG (STAR9...)        | <a href="#">FITC</a>  |
| Goat Anti Mouse IgG (STAR77...)         | <a href="#">HRP</a>   |
| Goat Anti Mouse IgG (Fc) (STAR120...)   | <a href="#">FITC</a> , <a href="#">HRP</a>  |
| Rabbit Anti Mouse IgG (STAR13...)       | <a href="#">HRP</a>   |

### Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL \(MCA928\)](#)

|                                  |   |                  |   |               |   |
|----------------------------------|---|------------------|---|---------------|---|
| <b>North &amp; South America</b> | Tel: +1 800 265 7376<br>Fax: +1 919 878 3751<br>Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a> | <b>Worldwide</b> | Tel: +44 (0)1865 852 700<br>Fax: +44 (0)1865 852 739<br>Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a> | <b>Europe</b> | Tel: +49 (0) 89 8090 95 21<br>Fax: +49 (0) 89 8090 95 50<br>Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a> |
|----------------------------------|---|------------------|---|---------------|---|

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://bio-rad-antibodies.com/datasheets)

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