

## Datasheet: MCA2405PE

**BATCH NUMBER 1708**

|                      |                            |
|----------------------|----------------------------|
| <b>Description:</b>  | MOUSE ANTI HUMAN CD314:RPE |
| <b>Specificity:</b>  | CD314                      |
| <b>Other names:</b>  | NKG2D                      |
| <b>Format:</b>       | RPE                        |
| <b>Product Type:</b> | Monoclonal Antibody        |
| <b>Clone:</b>        | 1D11                       |
| <b>Isotype:</b>      | IgG1                       |
| <b>Quantity:</b>     | 100 TESTS                  |

### 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 | ▪   |    |                | Neat - 1/5         |

Where this antibody 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 antibody for use in their own system using appropriate negative/positive controls.

|                        |  |                            |                          |
|------------------------|--|----------------------------|--------------------------|
| <b>Target Species</b>  | Human  |                            |                          |
| <b>Product Form</b>    | Purified IgG conjugated to R. Phycoerythrin (RPE) - lyophilized                                |                            |                          |
| <b>Reconstitution</b>  | Reconstitute with 1.0 ml distilled water   |                            |                          |
| <b>Max Ex/Em</b>       | <b>Fluorophore</b>   | <b>Excitation Max (nm)</b> | <b>Emission Max (nm)</b> |
|                        | RPE 488nm laser  | 496                        | 578                      |
| <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</b>    | 0.09% Sodium Azide   |                            |                          |
| <b>Stabilisers</b>     | 1% Bovine Serum Albumin  |                            |                          |

5% Sucrose

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**Immunogen**

NKL cells.

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**External Database Links****UniProt:**

[P26718](#)

[Related reagents](#)

**Entrez Gene:**

[100528032](#)

KLRC4-KLRK1

[Related reagents](#)

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**Synonyms**

D12S2489E, NKG2D

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**RRID**

AB\_609592

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**Fusion Partners**

Spleen cells from immunised RBF/DnJ mice were fused with cells of the p3 mouse myeloma cell line.

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**Specificity**

**Mouse anti Human CD314 antibody, clone 1D11** recognizes CD314, also known as natural killer receptor G2 (NKG2D) and as killer cell lectin-like receptor subfamily K, member 1 (KLRK1).

CD314 is a C-type lectin-like activating receptor which is expressed on most natural killer (NK) cells, CD8 T cells and gamma delta T cells. CD314 forms homodimers that signal through an associated DAP10 adaptor protein.

Ligands of CD314 include MICA, MICB and UL16 binding protein (ULBP), which are inducibly expressed. Ligand binding to CD314 results in NK cell activation and potent co-stimulation of effector T cells.

Mouse anti Human CD314 antibody, clone 1D11 is reported to inhibit T cell recognition of MICA ([Bauer \*et al.\* 1999](#)).

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**Flow Cytometry**

Use 10ul of the suggested working dilution to label  $10^6$  cells in 100ul.

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**References**

1. Bauer, S. *et al.* (1999) Activation of NK cells and T cells by NKG2D, a receptor for stress-inducible MICA. [Science. 285 \(5428\): 727-9.](#)
2. Das, H. *et al.* (2004) Mechanisms of Vdelta1 gammadelta T cell activation by microbial components. [J Immunol. 172 \(11\): 6578-86.](#)
3. Groh, V. *et al.* (2001) Costimulation of CD8alpha T cells by NKG2D via engagement by MIC induced on virus-infected cells. [Nat Immunol. 2 \(3\): 255-60.](#)
4. Jinushi, M. *et al.* (2003) Autocrine/paracrine IL-15 that is required for type I IFN-mediated dendritic cell expression of MHC class I-related chain A and B is impaired in hepatitis C virus infection. [J Immunol. 171 \(10\): 5423-9.](#)
5. Roberts, A.I. *et al.* (2001) NKG2D receptors induced by IL-15 costimulate CD28-negative effector CTL in the tissue microenvironment. [J Immunol. 167: 5527-30.](#)
6. Holmen, C. *et al.* (2007) Anti endothelial cell autoantibodies selectively activate SAPK/JNK signalling in Wegener's granulomatosis. [J Am Soc Nephrol. 18: 2497-508.](#)

7. Sugita, J. *et al.* (2010) Differential effects of interleukin-12 and interleukin-15 on expansion of NK cell receptor-expressing CD8+ T cells. [Ann Hematol. 89: 115-20.](#)
8. Gumperz, J. *et al.* (2002) Functionally distinct subsets of CD1d-restricted natural killer T cells revealed by CD1d tetramer staining. [J Exp Med. 195:625-36.](#)
9. Wu, J. *et al.* (2002) T cell antigen receptor engagement and specificity in the recognition of stress-inducible MHC class I-related chains by human epithelial gamma delta T cells. [J Immunol. 169:1236-40.](#)
10. Wu, J. *et al.* (2000) DAP10 and DAP12 form distinct, but functionally cooperative, receptor complexes in natural killer cells. [J Exp Med. 192:1059-68.](#)
11. Groh, V. *et al.* (2003) Stimulation of T cell autoreactivity by anomalous expression of NKG2D and its MIC ligands in rheumatoid arthritis. [Proc Natl Acad Sci U S A. 100:9452-7](#)
12. Voigt, J. *et al.* (2014) Human natural killer cells acting as phagocytes against *Candida albicans* and mounting an inflammatory response that modulates neutrophil antifungal activity. [J Infect Dis. 209 \(4\): 616-26.](#)
13. Matzner, P. *et al.* (2013) Resilience of the immune system in healthy young students to 30-hour sleep deprivation with psychological stress. [Neuroimmunomodulation. 20: 194-204.](#)
14. Tahrali, I. *et al.* (2019) CD3-CD56<sup>+</sup> NK cells display an inflammatory profile in RR-MS patients. [Immunol Lett. Oct 04 \[Epub ahead of print\].](#)
15. Tanaka, J. *et al.* (2012) Expansion of NK cells from cord blood with antileukemic activity using GMP-compliant substances without feeder cells. [Leukemia. 26 \(5\): 1149-52.](#)

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**Further Reading** 1. Groh, V. *et al.* (2003) Stimulation of T cell autoreactivity by anomalous expression of NKG2D and its MIC ligands in rheumatoid arthritis. [Proc Natl Acad Sci U S A. 100 \(16\): 9452-7.](#)

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**Storage** Prior to reconstitution store at +4°C.  
 After reconstitution store at +4°C.  
 DO NOT FREEZE.  
 This product should be stored undiluted. This product is photosensitive and should be protected from light. Should this product contain a precipitate we recommend microcentrifugation before use.

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**Guarantee** 12 months from date of despatch

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**Health And Safety Information** Material Safety Datasheet documentation #20487 available at: <https://www.bio-rad-antibodies.com/SDS/MCA2405PE>  
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**Regulatory** For research purposes only

## Related Products

### Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL:RPE \(MCA928PE\)](#)

### Recommended Useful Reagents

[HUMAN SEROBLOCK \(BUF070A\)](#)

[HUMAN SEROBLOCK \(BUF070B\)](#)

|                                  |   |                  |   |               |   |
|----------------------------------|---|------------------|---|---------------|---|
| <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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