**NK1.1 Monoclonal Antibody (PK136)**

**Catalog Number** MA1-70100

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**Details**

<table>
<thead>
<tr>
<th>Size</th>
<th>250 µg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host/Isotope</td>
<td>Mouse / IgG2a</td>
</tr>
<tr>
<td>Class</td>
<td>Monoclonal</td>
</tr>
<tr>
<td>Type</td>
<td>Antibody</td>
</tr>
<tr>
<td>Clone</td>
<td>PK136</td>
</tr>
<tr>
<td>Immunogen</td>
<td>NK-1+ cells from mouse spleen and bone marrow</td>
</tr>
<tr>
<td>Conjugate</td>
<td>Unconjugated</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Concentration</td>
<td>1 mg/mL</td>
</tr>
<tr>
<td>Purification</td>
<td>Protein G</td>
</tr>
<tr>
<td>Storage buffer</td>
<td>PBS</td>
</tr>
<tr>
<td>Contains</td>
<td>0.02% sodium azide</td>
</tr>
<tr>
<td>Storage Conditions</td>
<td>Store at 4°C short term. For long term storage, store at -20°C, avoiding freeze/thaw cycles.</td>
</tr>
</tbody>
</table>

**Species Reactivity**

<table>
<thead>
<tr>
<th>Species reactivity</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published species</td>
<td>Human, Mouse, Not Applicable</td>
</tr>
</tbody>
</table>

**Tested Applications**

<table>
<thead>
<tr>
<th>Dilution *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Cytometry (Flow)</td>
</tr>
<tr>
<td>Immunohistochemistry (Paraffin) (IHC (P))</td>
</tr>
</tbody>
</table>

**Published Applications**

- Immunohistochemistry (IHC)
- Immunohistochemistry (Paraffin) (IHC (P))
- Flow Cytometry (Flow)
- ChIP assay (ChIP)

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

**Clone Specific Information**

Clone PK136 is specific for mouse NK1.1, also known as NKR-PIC and Ly-55. Mouse NK1.1 is expressed on NK cells and NKT cells on the following strains: C57BL, FVB/N and NZB. There are published reports that PK136 also binds to NKR-PIB on SJL/K NK cells. In addition to Flow and IHC, this clone has also been reported to work for in-vitro and in-vivo depletion assays.

**Background/Target Information**

NK1.1 (Killer cell lectin-like receptor subfamily B, member 1, KLRB1, NKR-P1A, CD161, cluster of differentiation 161), refers to Natural Killer (NK) cells, lymphocytes that mediate cytotoxicity and secrete cytokines after immune stimulation. Several genes of the C-type lectin superfamily, including the rodent NKRKP1 family of glycoproteins, are expressed by NK cells and may be involved in the regulation of NK cell function. The KLRB1 protein contains an extracellular domain with several motifs characteristic of C-type lectins, a transmembrane domain, and a cytoplasmic domain. The KLRB1 protein, NKR-P1A or CD161, is classified as a type II membrane protein because it has an external C terminus. NKR-P1A, the receptor encoded by the KLRB1 gene, recognizes Lectin Like Transcript-1 (LLT1) as a functional ligand.

**NK1.1 Antibody (MA1-70100) in IHC (P)**

Immunohistochemical staining of paraformaldehyde-fixed paraffin-embedded mouse spleen sections at 2.5x (Left) and 40x (Right) magnification. Primary antibody was a NK cells monoclonal antibody (clone PK136) and was at a dilution of 1:100; followed by staining with DAB for 1 minute.

**NK1.1 Antibody (MA1-70100) in Flow**

Flow cytometric analysis of splenic T cells staining using a NK cells/NK1.1 monoclonal antibody (Product # MA1-70100) at a 0.2 µg/10^6 cells dilution. The isotypic control was a biotin mouse IgG2a.
### 4 Immunohistochemistry References

<table>
<thead>
<tr>
<th>Species / Dilution</th>
<th>Summary</th>
</tr>
</thead>
</table>
| **Mouse** / 1:500   | MA1-70100 was used in Immunohistochemistry to show that systemic changes in IL-17 and G-CSF may be involved in topical immunomodulation. 

Oncology reports (Mar 2019; 41: 1863) "Intravascular treatment of chemotherapy agents sensitizes bacillus CalmetteGuerin to the modulation of the tumor immune environment." 


PubMed Article URL: http://dx.doi.org/10.3892/or.2019.6965 |
| **Mouse** / 1:50   | MA1-70100 was used in Immunohistochemistry to identify Netrin G1 (NetG1) as a promoter of PDAC tumorigenesis. 

Cancer discovery (Feb 2021; 11: 446) "Netrin G1 Promotes Pancreatic Tumorigenesis through Cancer-Associated Fibroblast-Driven Nutritional Support and Immunosuppression." 


PubMed Article URL: http://dx.doi.org/10.1158/2159-8290.CD-20-0775 |
| **Mouse** / Not Cited | MA1-70100 was used in Immunohistochemistry to examine the effects of combined -programmed death-1 monoclonal antibody immunotherapy with fractionated radiotherapy on antitumour immunity and tumour growth in lymphoma. 

Cancer biology & therapy (Jul 2020; 20: 666) "Combined -programmed death-1 monoclonal antibody blockade and fractionated radiation therapy reduces tumor growth in mouse EL4 lymphoma." 


PubMed Article URL: http://dx.doi.org/10.1080/15384047.2018.1550569 |
| **Human** / 1:200 | MA1-70100 was used in Immunohistochemistry to demonstrate that RfxCas13d, a Cas13 ortholog with favorable characteristics to other family members, can be delivered to the mouse spinal cord and brain to silence neurodegeneration-associated genes. 

Science advances (Jan 2022; 8: ) "Targeted gene silencing in the nervous system with CRISPR-Cas13." 

Author(s): Powell JE, Lim CKW, Krishnan R, McCallister TX, Saporto-Magriña C, Zeballos MA, McPherson GD, Gaj T 

PubMed Article URL: http://dx.doi.org/10.1126/sciadv.abe2485 |

### 1 Immunohistochemistry (Paraffin) References

<table>
<thead>
<tr>
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</tr>
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</table>
| **Mouse** / Not Cited | MA1-70100 was used in Immunohistochemistry (Paraffin) to report that low-dose radiotherapy (LDR) of murine tumors promotes T-cell infiltration and enables responsiveness to combinatorial immunotherapy in an IFN-dependent manner. 

Cancer discovery (Jan 2022; 12: 108) "Low-Dose Radiotherapy Reverses Tumor Immune Desertiﬁcation and Resistance to Immunotherapy." 


PubMed Article URL: http://dx.doi.org/10.1158/2159-8290.CD-21-0003 |

### 6 Flow Cytometry References

<table>
<thead>
<tr>
<th>Species / Dilution</th>
<th>Summary</th>
</tr>
</thead>
</table>
| **Mouse** / Not Cited | MA1-70100 was used in flow cytometry to investigate whether hematopoietic cells transduce canonical Wnt signals in the absence of beta- and gamma-catenin. 

Blood (Jan 2008; 111: 142) "Long-term, multilineage hematopoiesis occurs in the combined absence of beta-catenin and gamma-catenin." 


PubMed Article URL: http://dx.doi.org/10.1182/blood-2007-07-102558 |
### Summary

**Human / Not Cited**

**MA1-70100 was used in ChIP assay to identify Cd8 cis-regulatory elements**

**Journal of leukocyte biology (Apr 2015; 97: 635)**

"A novel Cd8-cis-regulatory element preferentially directs expression in CD44hiCD62L+ CD8+ T cells and in CD8+ dendritic cells."


PubMed Article URL:http://dx.doi.org/10.1189/jlb.1HI1113-597RR

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### ChIP assay References

**Species / Dilution**

<table>
<thead>
<tr>
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<th>Dilution</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human</td>
<td>Not Cited</td>
<td>MA1-70100 was used in ChIP assay to identify Cd8 cis-regulatory elements</td>
</tr>
<tr>
<td>Mouse</td>
<td>1:300</td>
<td>JCI insight (Aug 2020; 5: )</td>
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</tbody>
</table>

"Increased FGF-23 levels are linked to ineffective erythropoiesis and impaired bone mineralization in myelodysplastic syndromes."


PubMed Article URL:http://dx.doi.org/10.1172/jci.insight.137062

### References

**MA1-70100 was used in flow cytometry to identify FGF-23 as a link between altered bone structure and ineffective erythropoiesis in MDS with the prospects of a targeted therapeutic intervention.**


"Mouse NK-R1P, a novel NK.1.1 antigen with inhibitory function."

Author(s): Carlyle JR, Martin A, Mehra A, Attisano L, Tsui FW, Zühiga-Pflücker JC


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### MA1-70100 was used in flow cytometry and immunoprecipitation to identify NKR-P1B as a NK1.1 antigen

**International immunology (Oct 2001; 13: 1301)**

"MHC class I molecules on adenovirus E1A-expressing tumor cells inhibit NK cell killing but not NK cell-mediated tumor rejection."

Author(s): Routes JM, Ryan JC, Ryan S, Nakamura M

PubMed Article URL:http://dx.doi.org/10.1093/intimm/13.10.1301

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### MA1-70100 was used in flow cytometry to report that immobilized anti-NK1.1 triggers only a subpopulation of NK cells to kill

**Immunology and cell biology (Apr 1998; 76: 143)**

"Natural killer cell proliferation induced by anti-NK1.1 and IL-2."

Author(s): Reichlin A, Yokoyama WM

PubMed Article URL:http://dx.doi.org/10.1046/j.1440-1711.1998.00726.x

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### MA1-70100 was used in Flow Cytometry to identify FGF-23 as a link between altered bone structure and ineffective erythropoiesis in MDS with the prospects of a targeted therapeutic intervention.

**Hybridoma (Dec 1989; 8: 605)**

"Pan natural killer cell monoclonal antibodies and their relationship to the NK1.1 antigen."

Author(s): Sentman CL, Hackett J, Moore TA, Tutt MM, Bennett M, Kumar V

PubMed Article URL:http://dx.doi.org/10.1089/hyb.1989.8.605

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### MA1-70100 was used in flow cytometry to describe three new NK specific monoclonal antibodies

**MA1-70100 was used in flow cytometry to identify Cd8 cis-regulatory elements**

**Journal of leukocyte biology (Apr 2015; 97: 635)**

"A novel Cd8-cis-regulatory element preferentially directs expression in CD44hiCD62L+ CD8+ T cells and in CD8+ dendritic cells."


PubMed Article URL:http://dx.doi.org/10.1189/jlb.1HI1113-597RR

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### MA1-70100 was used in flow cytometry to investigate the capacity of E1A to sensitize cells to multiple NK cell killing mechanisms

**International immunology (Oct 2001; 13: 1301)**

"MHC class I molecules on adenovirus E1A-expressing tumor cells inhibit NK cell killing but not NK cell-mediated tumor rejection."

Author(s): Routes JM, Ryan JC, Ryan S, Nakamura M

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