



## mAb 18.2 product information sheet

### **Monoclonal Antibody 18.2 Anti-*Plasmodium falciparum* KAHRP**

**For research use only. Not for human use.**

#### **Contributor**

Jana McBride, University of Edinburgh

#### **Material Provided**

Each vial of 18.2 mAb contains 100 µg of Protein G purified Anti- *Plasmodium falciparum* KAHRP in PBS pH 7.4. The concentration is shown on the packaging letter.

#### **Isotype**

IgG2b

#### **Packaging/Storage**

mAb 18.2 is packaged in 1.5mL screw-top Eppendorf tubes. Store at -20°C or below, preferably at -70°C. Aliquot upon initial use and avoid multiple freeze-thaw cycles. **N.B. vials will accumulate CO<sub>2</sub> in the head space during transit from dry ice refrigerant.** Vent tubes during thawing by removing the screwtop, or store at -70 for ~96 hours to allow CO<sub>2</sub> to dissipate. Failure to remove CO<sub>2</sub> from the vial headspace during thawing will result in acid damage to the contents. See Murphy BM, Swarts S, Mueller BM, van der Geer P, Manning MC, et al. (2013) Protein instability following transport or storage on dry ice. Nat Meth 10: 278–279. doi:10.1038/nmeth.2409.

#### **Functional Activity**

mAb 18.2 has been screened by indirect immunofluorescence assay for reactivity with knobs on the surface of *P. falciparum* infected erythrocytes. mAb

18.2 has also been used to probe recombinant fragments of KAHRP by Western blotting.

**Citation:** Acknowledgment for publications should read “Monoclonal antibody 18.2 was obtained from the European Malaria Reagent Repository (EMRR) ([www.malaria-research.eu](http://www.malaria-research.eu)). The antibody was originally developed by Dr. Jana McBride, University of Edinburgh.

#### **Biosafety Level**

**CL1** Appropriate safety procedures should always be used with this material. Safe laboratory work with biological material is outlined in the guidance from the UK Health and Safety Executive.

See

<http://www.hse.gov.uk/biosafety/biologists.pdf>

for details.

#### **Disclaimer:**

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. EMRR is not liable for any damages or injuries arising from receipt and/or use of this product. We make reasonable effort to ensure authenticity and reliability of the reagent.

#### **The European Malaria Reagent Repository (EMRR)**

[www.malaria-research.eu](http://www.malaria-research.eu)

We make every effort to include accurate and up-to-date information on this reagent sheet. However, we make no warranty or guarantee that the reagent itself or the information

contained in this information sheet will be sufficient or precise enough for your individual experimental needs. We can usually provide basic information on the known uses of the reagent and likely working concentrations for use, but these may not be valid for individual assays performed in other labs. Citations from scientific literature are provided for information only.

**Restrictions on use**

This reagent is distributed for internal research, noncommercial purposes only. The reagent may not be distributed to third parties without the written permission of the Director of EMRR, Dr. David Cavanagh. Any individual or organization intending to make commercial use of the reagent or derivatives must contact the contributor to determine if a license is required.

**References**

Dobaño, C., Rogerson, S.J., Taylor, T.E., McBride, J.S. & Molyneux, M.E. *Infect. Immun.* 75, 643–652 (2007).

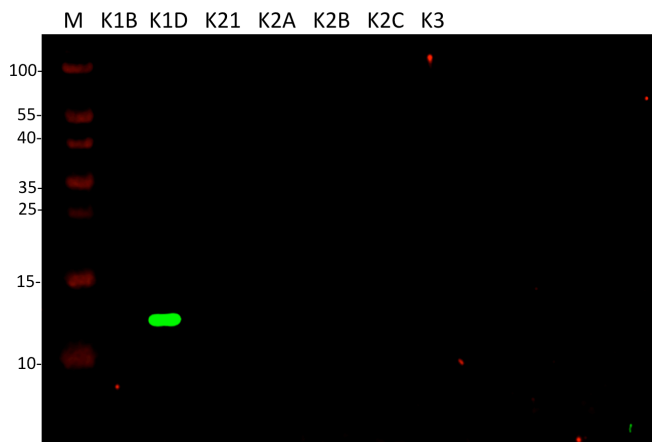
**Data Appendix**

Dr. Ioannis Vakonakis (Oxford University) has shown that mAb18.2 recognises a recombinant protein from the central region of KAHRP, between residues 282-362 (K1D). See figure below.

mAb18.2 has some strain-specific reactivity, and does not recognise all strains of parasite. Highlighted in yellow on the Clustal alignment below is the region represented by the recombinant K1D antigen, and in green, the one amino acid polymorphism at position 290 in this region, identified from a limited set of KAHRP genes from standard laboratory strains. This polymorphism may be within the epitope recognised by mAb18.2.

Table 1. IFA reactivity of mAb 18.2 with standard laboratory strains

Strain	IFA
3D7	+
MAD20	+
Palo Alto (PA17)	+
K1	+
Dd2	-
RO33	-



FCC1 MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
NF135/5.C10 MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
PALO -----CNNGNGSGDSDFRNKRTLQKQ 23  
FCR3 MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
FVO MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
Santa MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
3D7 MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
7G8 MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
NF54 -----MFTIYMTYIFECNCNNGNGSGDSDFRNKRTLQKQ 36  
FCH/4 -----MFFCFVSPKTAACSVVIFYI--NFLHTRCNGNGSGDSDFRNKRTLQKQ 49  
Palo MKSFKNKNTLRRKKAFPVFTKILLVSFLVWVLKCSNNCNGNGSGDSDFRNKRTLQKQ 60  
CAMP/Malaysia -----CNNGNGSGDSDFRNKRTLQKQ 23  
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FCC1 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHRQDQAHHHHHHHHQLOP 120  
NF135/5.C10 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
PALO HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 83  
FCR3 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
FVO HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
Santa HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
3D7 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
7G8 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
NF54 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 96  
FCH/4 HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 109  
Palo HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 120  
CAMP/Malaysia HEHHHHHHHQHQHQAPHQAHHHHHHGEVNHQAPQVHQVHGQDQAHHHHHHHHQLOP 83  
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FCC1 QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
NF135/5.C10 QQLQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
PALO QQLQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 143  
FCR3 QQLQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
FVO QQLQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
Santa QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
3D7 QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
7G8 QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
NF54 QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 156  
FCH/4 QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 169  
Palo QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 180  
CAMP/Malaysia QQPQGTVANPPSNEPVVKTVQVREARPGGGFKAYEEKYESKHYKLKENVVDGKKDCDEKY 143  
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FCC1 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
NF135/5.C10 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
PALO EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 203  
FCR3 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
FVO EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
Santa EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
3D7 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
7G8 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
NF54 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 216  
FCH/4 EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 229  
Palo EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 240  
CAMP/Malaysia EAANYAFSEECPYTVNDYSQENGPNI FALRKRFP LGMNDEDEEGKEALAIKDKLP GGLDE 203  
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NF135/5.C10 YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
PALO YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 263  
FCR3 YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
FVO YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
Santa YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
3D7 YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
7G8 YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
NF54 YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 276  
FCH/4 YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 289  
Palo Alto YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 300  
CAMP/Malaysia YQNQLYIGICNETCTTCGPAIDYVPADAPNGYAYGGSADGSHGNLRGHGKSGSEGYGYE 263  
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PALO	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	323
FCR3	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	360
FVO	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	360
Santa	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	360
3D7	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	360
7G8	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	360
NF54	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	336
FCH/4	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	349
Palo	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH	360
CAMP/Malaysia	APYNPGFNGAPGSNGMQNYVPPHGAGYSAPYGVPHGAAHGSRYSSFSSVNKYGKHGDEKH *****	323

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FCR3	HSSKKHEGNDGEGEKKKSKKHKHDGEEKKSKKHKDNDAESVSKKHKHS-----	411
FVO	HSSKKHEGNDGEGEKKKSKKHKHDGEEKKSKKHKDNDAESVSKKHKHS-----	411
Santa	HSSKKHEGNDGEGEKKKSKKHKHDGEEKKSKKHKDNDAE-----	402
3D7	HSSKKHEGNDGEGEKKKSKKHKHDGEEKKSKKHKDNDAESVSKKHKHS-----	411
7G8	HSSKKHEGKEA-----	371
NF54	HSSKKHEGNDGEGEKKKSKKHKHDGEEKKSKKHKDNDA-----	377
FCH/4	HSSKKHEGNDGEGEKKKSKKHKHDGEEKKSKKHKDNDAESVSKKHKDNDAESVKS	409
Palo	HSSKKHEGNDGEGEKKKSK-----	380
CAMP/Malaysia	HSSKKHEGNDGEGEKKKSK----- *****:;	343

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PALO	-----HDCEKKKSKKHKDNDAESVSKSKSVKEKGEKHNGKKPCSKKTNEENKNKEKTNN	429
FCR3	-----HDCEKKKSKKHKDNDAESVSKSKSVKEKGEKHNGKKPCSKKTNEENKNKEKTNN	466
FVO	-----HDCEKKKSKKHKDNDAESVSKSKSVKEKGEKHNGKKPCSKKTNEENKNKEKTNN	466
Santa	-----SGEKHNGKKPCSKKTNEENKNKEKTNN	429
3D7	-----HDCEKKKSKKHKDNDAESVSKSKSVKEKGEKHNGKKPCSKKTNEENKNKEKTNN	466
7G8	-----	371
NF54	-----ESHNGKKPCSKKTNEENKNKEKTNN	402
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Palo	-----KHKDNDAESVSKSKSVKEKGEKHNGKKPCSKKTNEENKNKEKTNN	426
CAMP/Malaysia	-----KHKDNDAESVSKSKSVKEKGEKHNGKKPCSKKTNEENKNKEKTNN	389

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FCR3	LKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	526
FVO	LKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	526
Santa	SKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	489
3D7	SKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	526
7G8	-----	371
NF54	SKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	462
FCH/4	SKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	529
Palo	SKSDGSKAHEKKENETKNTAGENKKVDSTSDNKSSTNAATPGAKDKTQGGKTDKGTGASTN	486
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PALO	AATNKGQCAAEGATKGATKEASTSKEA-----TKEASTSKGATKE	529
FCR3	AATNKGQCAAEGATKGATKEASTSKEA-----TKEASTSKGATKE	566
FVO	AATNKGQCAAEGATKGATKEASTSKEA-----TKEASTSKGATKE	566
Santa	AATNKGQCAAEGATKGATKEASTSKEATKEASTSKEATKEASTSKEATKEASTSKGATKE	549
3D7	AATNKGQCAAEGATKGATKEASTSKEATKEASTSKEATKEASTSKEATKEASTSKGATKE	586
7G8	-----STSKSATKEASTSKGATKE	390
NF54	AATNKGQCAAEGATKGATKEASTSKEATKEASTSKEATKEASTSKEATKEASTSKGATKE	522
FCH/4	AATNKGQCAAEGATKGATKE-----ATKEASTSKEATKEASTSKEATKEASTSKGATKE	583
Palo	AATNKGQCAAEGATKGATK-----EASTSKEATKEASTSKEATKEASTSKGATKE	536
CAMP/Malaysia	AATNKGQCAAEGATKGATK-----EASTSKEATKEASTSKEATKEASTSKGATKE *****	499

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NF135/5.C10	ASTTEGATKGASTTAGSTTGATTGANAVQSKDGTADKNAANNGEQVMSRGQAQLQEAGKK	573
PALO	ASTTEGATKGASTTAGSTTGAAATGANAVQSKDGTADKNAANNGEQVMSRGQAQLQEAGKK	589
FCR3	ASTTEGATKGASTTAGSTTGATTGANAVQSKDGTADKNAANNGEQVMSRGQAQLQEAGKK	626
FVO	ASTTEGATKGASTTAGSTTGATTGANAVQSKDGTADKNAANNGEQ-----	611
Santa	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	609
3D7	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	646
7G8	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	450
NF54	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	582
FCH/4	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	643
Palo	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	596
CAMP/Malaysia	ASTTEGATKGASTTAGSTTGATTGANAVQSKDETADKNAANNGEQVMSRGQAQLQEAGKK	559

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FCC1	KKKRGCCG	634
NF135/5.C10	KKKRGCCG	581
PALO	KKKRGCCG	597
FCR3	KKKRGCCG	634
FVO	-----	611
Santa	KKKRGCCG	617
3D7	KKKRGCCG	654
7G8	KKKRGCCG	458
NF54	KKKRGCCG	590
FCH/4	KKKRGCCG	651
Palo	KKKRGCCG	604
CAMP/Malaysia	KKKRGCCG	567