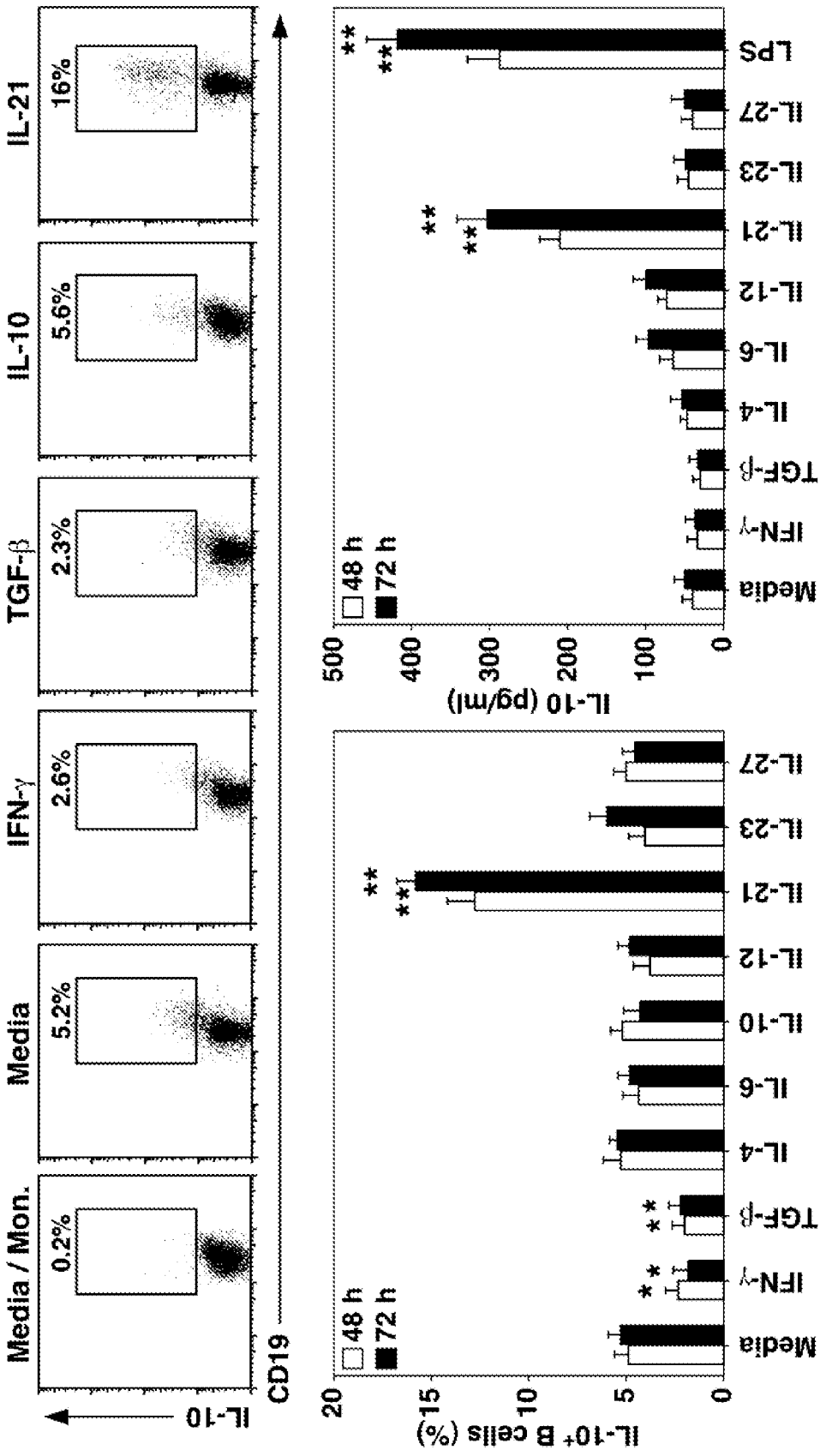

Media / Mon.
Media
IFN-γ
TGF-β
IL-10
IL-21
0.2%
5.2%
2.6%
2.3%
5.6%
16%
IL-10
CD19
IL-10+ B cells (%)
IL-10 (pg/ml)
48 h
72 h
Media
IFN-γ
TGF-β
IL-4
IL-6
IL-10
IL-12
IL-21
IL-23
IL-27
LPS
**

Fig. 1a

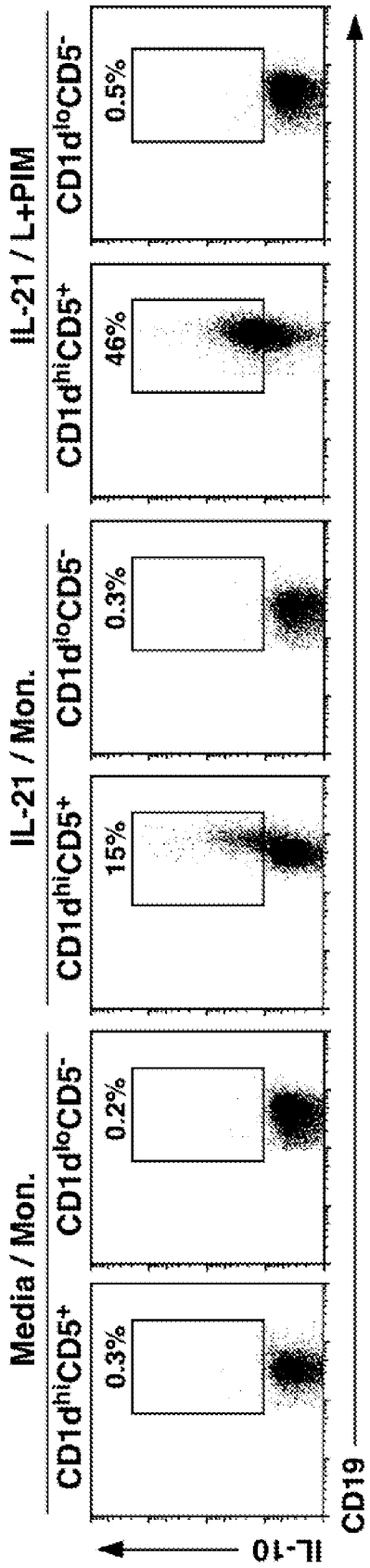

Media / Mon.
IL-21 / Mon.
IL-21 / L+PIM
CD1d^hiCD5+
CD1d^loCD5-
0.3%
0.2%
15%
0.3%
46%
0.5%
IL-10
CD19

Fig. 1b

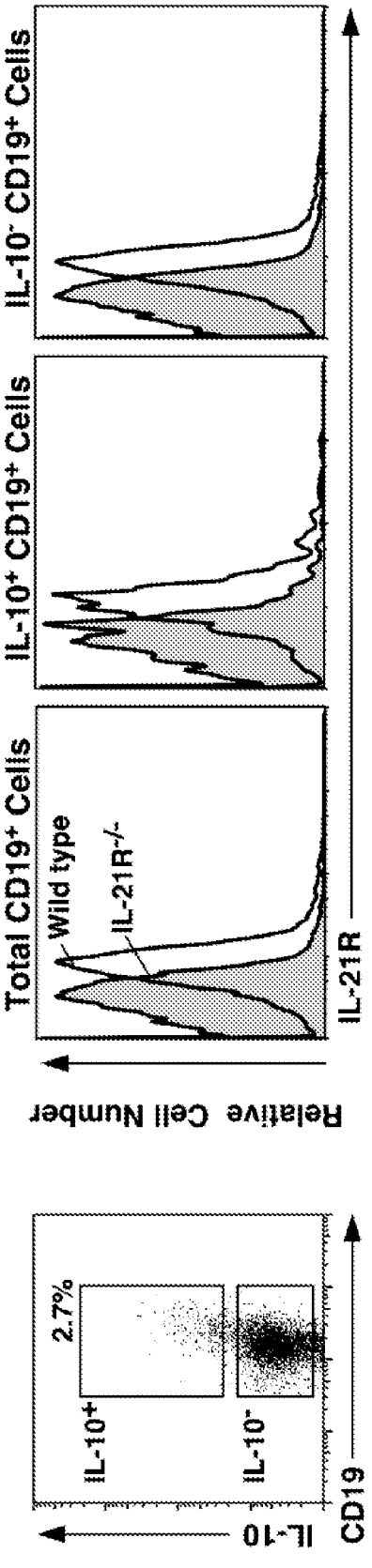

Total CD19+ Cells
IL-10+ CD19+ Cells
IL-10- CD19+ Cells
Wild type
IL-21R-/-
IL-21R
Relative Cell Number
2.7%
IL-10+
IL-10-
IL-10
CD19

Fig. 1c

Fig. 1d

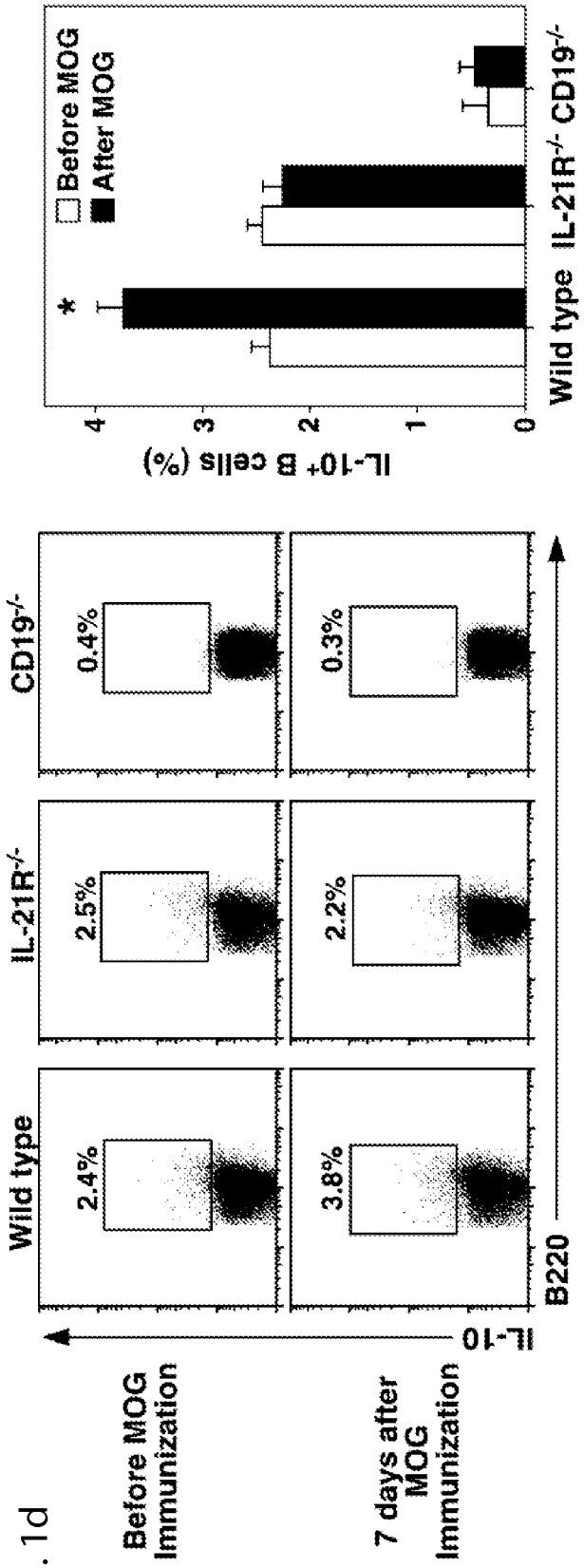


Fig. 2b

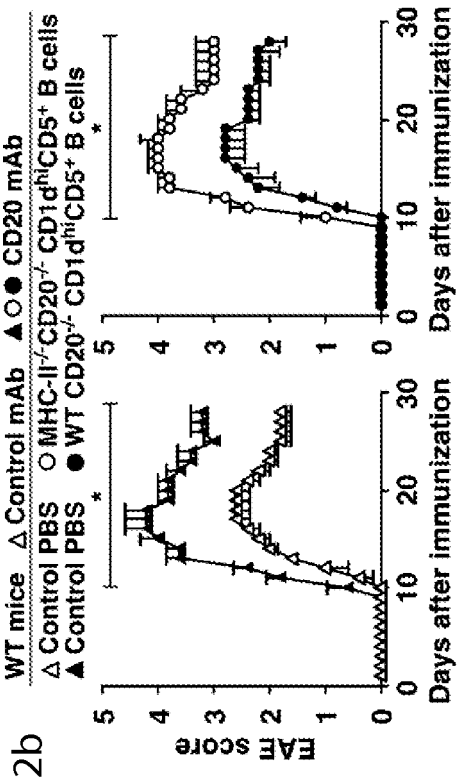
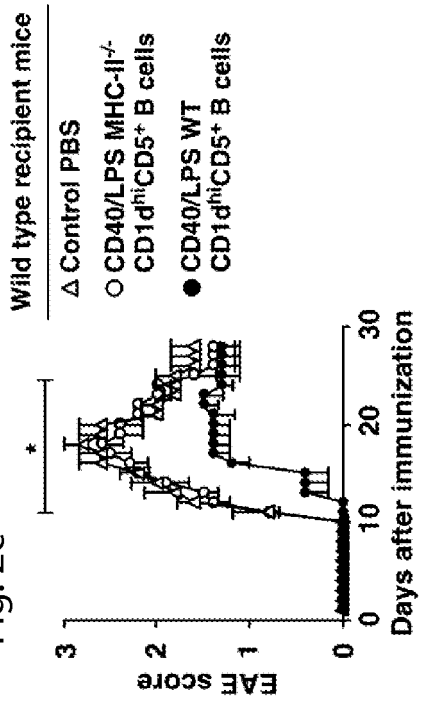


Fig. 2c



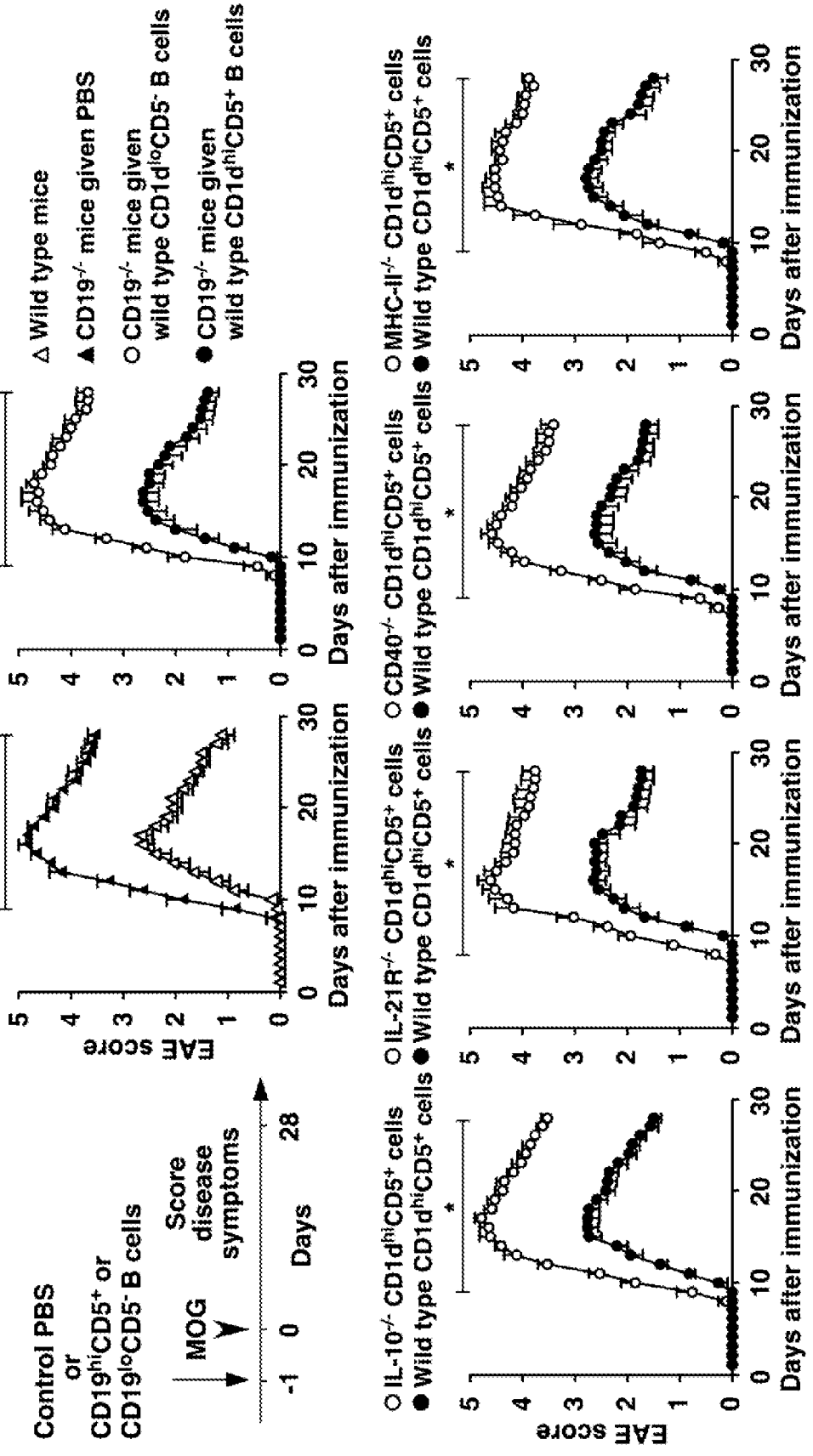

Control PBS
or
CD19hiCD5+ or
CD19loCD5- B cells
MOG
Score disease symptoms
-1 0 Days 28
EAE score
Days after immunization
Δ Wild type mice
▲ CD19-/- mice given PBS
○ CD19-/- mice given wild type CD1dloCD5- B cells
● CD19-/- mice given wild type CD1dhiCD5+ B cells
○ IL-10-/- CD1dhiCD5+ cells
● Wild type CD1dhiCD5+ cells
○ IL-21R-/- CD1dhiCD5+ cells
● Wild type CD1dhiCD5+ cells
○ CD40-/- CD1dhiCD5+ cells
● Wild type CD1dhiCD5+ cells
○ MHC-II-/- CD1dhiCD5+ cells
● Wild type CD1dhiCD5+ cells

Fig. 2a

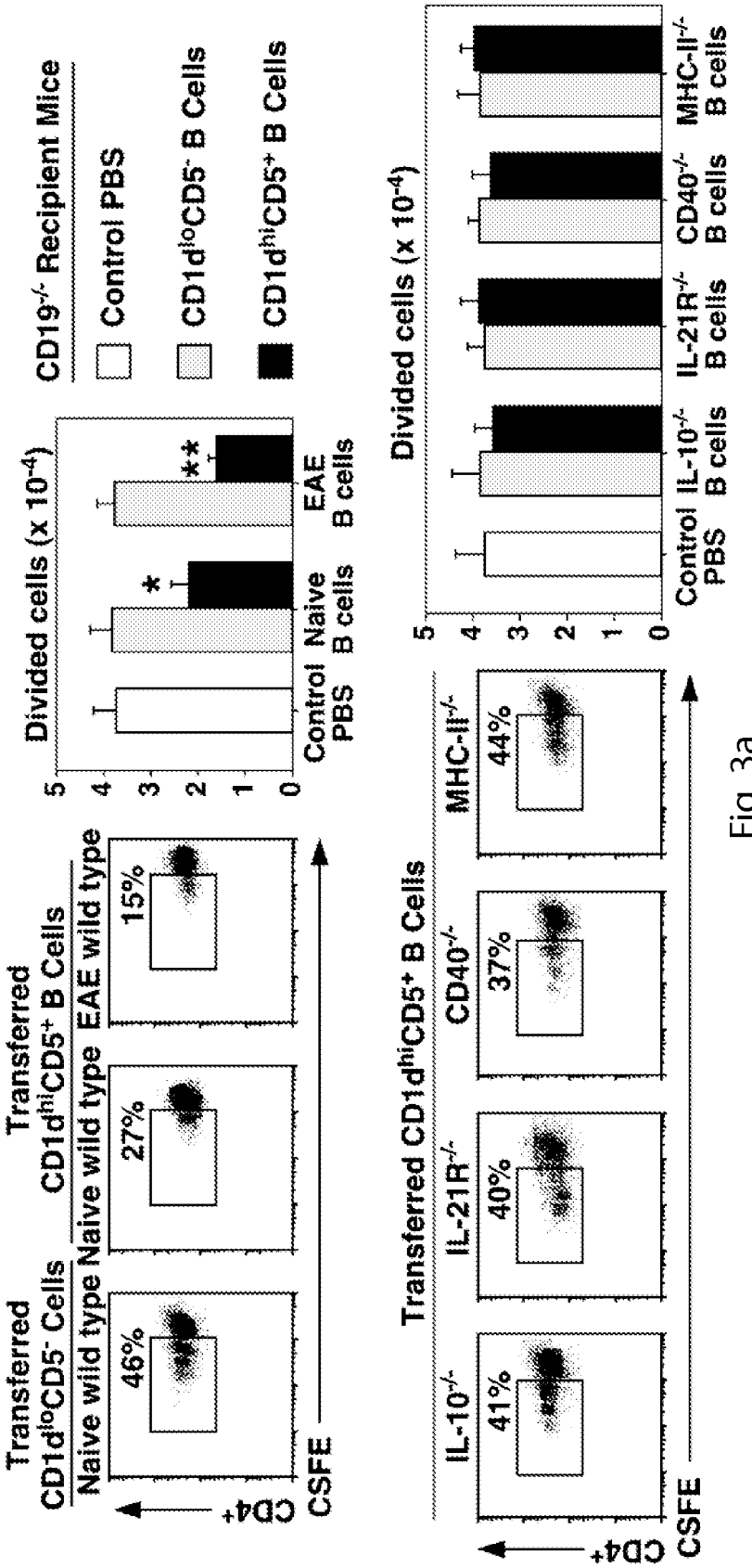

Transferred CD1d^loCD5^- Cells
Naive wild type
46%
CD4+
CSFE
Transferred CD1d^hiCD5^+ B Cells
Naive wild type
27%
EAE wild type
15%
Divided cells (x 10^-4)
CD19^-/- Recipient Mice
Control PBS
CD1d^loCD5^- B Cells
CD1d^hiCD5^+ B Cells
Control PBS
Naive B cells
EAE B cells
*
**
Transferred CD1d^hiCD5^+ B Cells
IL-10^-/-
41%
IL-21R^-/-
40%
CD40^-/-
37%
MHC-II^-/-
44%
Divided cells (x 10^-4)
Control PBS
IL-10^-/- B cells
IL-21R^-/- B cells
CD40^-/- B cells
MHC-II^-/- B cells

Fig. 3a

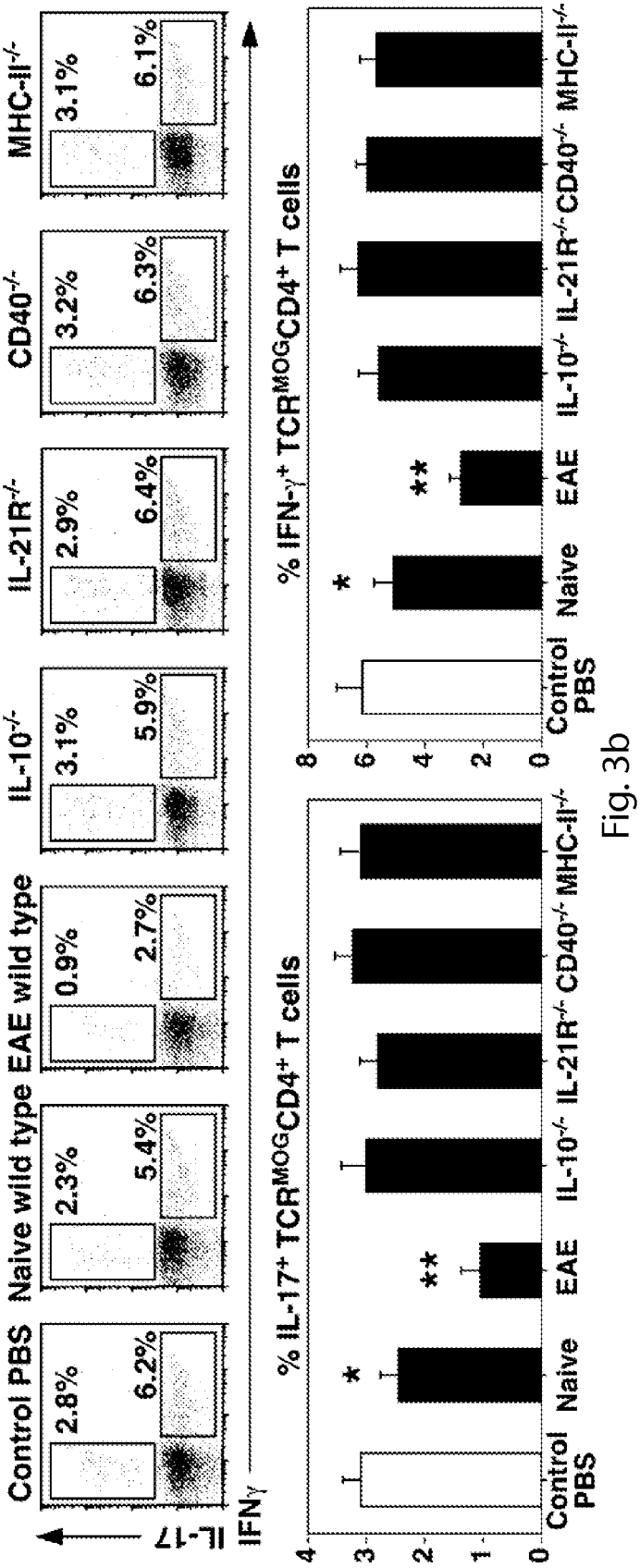

Transferred CD1d^hiCD5^+ B Cells
Control PBS
Naive wild type
EAE wild type
IL-10^-/-
IL-21R^-/-
CD40^-/-
MHC-II^-/-
IL-17
IFNγ
2.8%
6.2%
2.3%
5.4%
0.9%
2.7%
3.1%
5.9%
2.9%
6.4%
3.2%
6.3%
3.1%
6.1%
% IL-17^+ TCR^MOG CD4^+ T cells
% IFN-γ^+ TCR^MOG CD4^+ T cells
Control PBS
Naive
EAE
IL-10^-/-
IL-21R^-/-
CD40^-/-
MHC-II^-/-
IL-21R^-/- CD40^-/-
*
**

Fig. 3b

Ag-BCR Signals
1
B10pro Cell
MHC-II
2
B10 Cell
IL-21R
3
CD4+ T Cell
TCR
CD154
IL-21
4
B10eff Cell
IL-21R
CD40
MHC-II
IL-10
5
IL-10

Fig. 3c

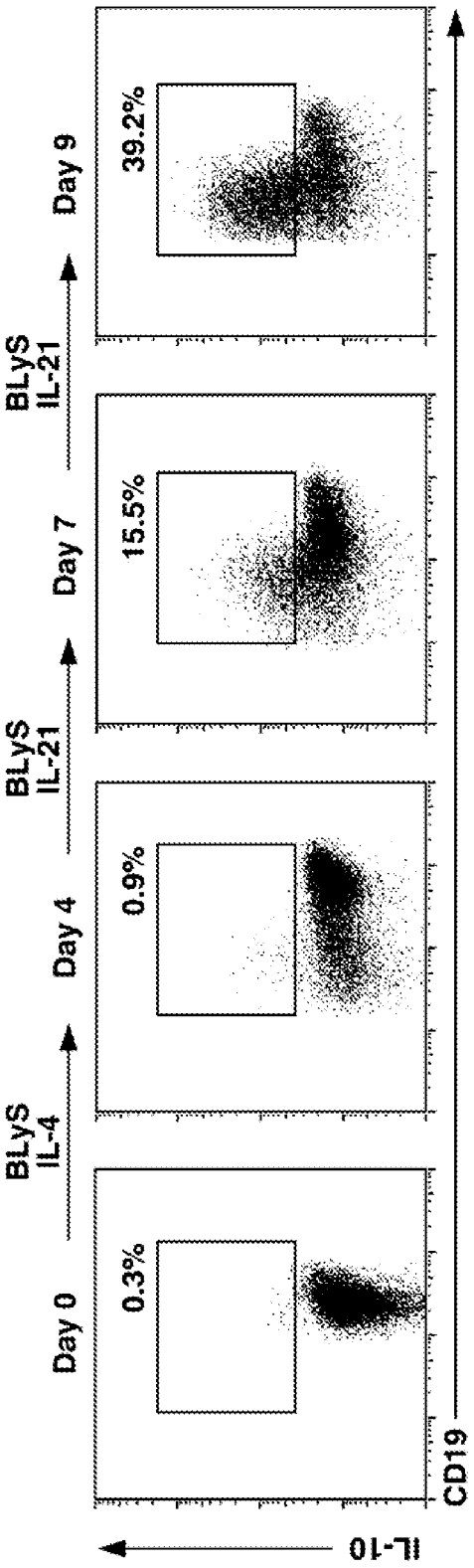


Fig. 4a

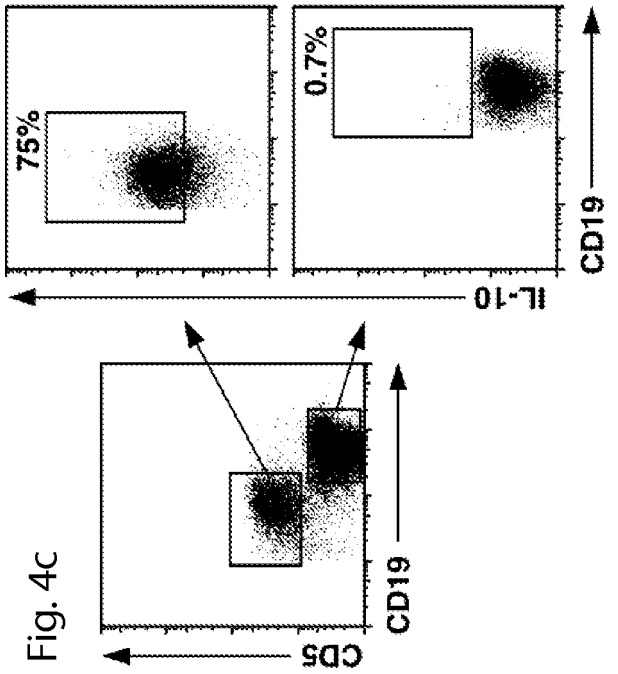


Fig. 4c

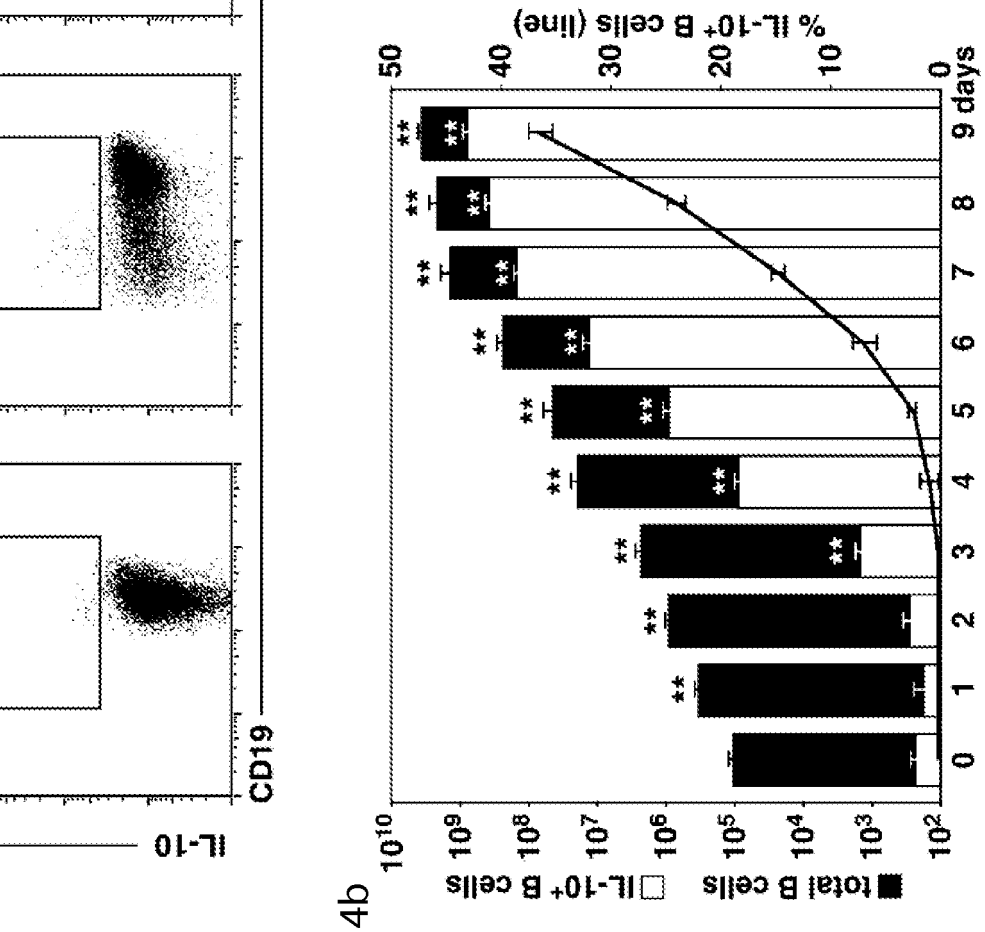


Fig. 4b

Fig. 4d

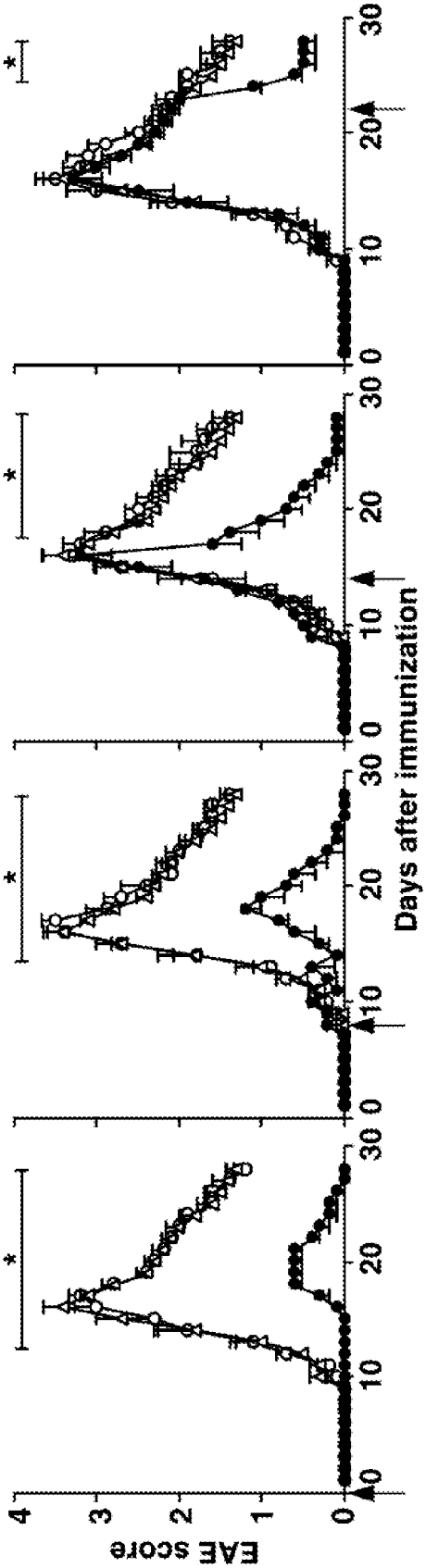


Fig. 4f

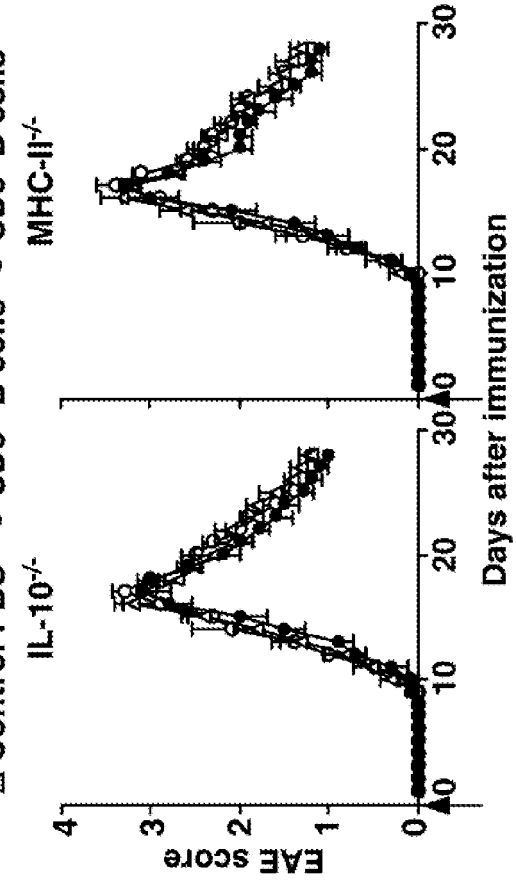
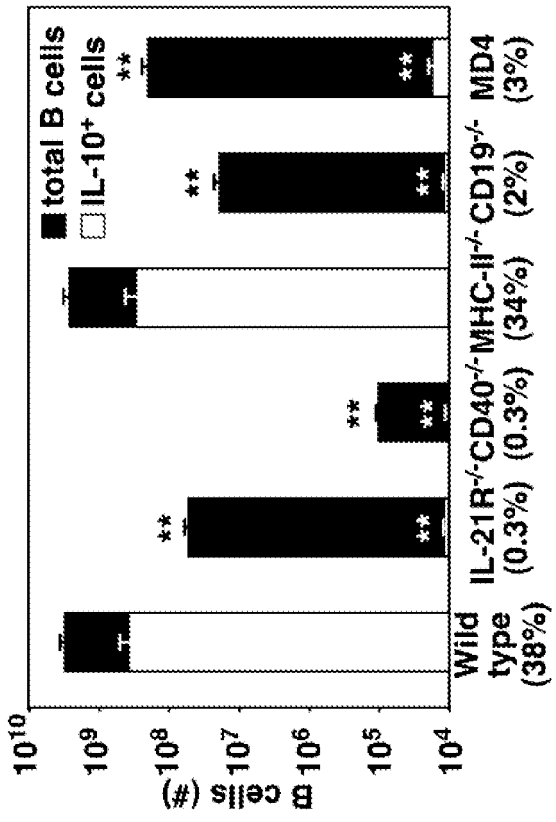


Fig. 4e



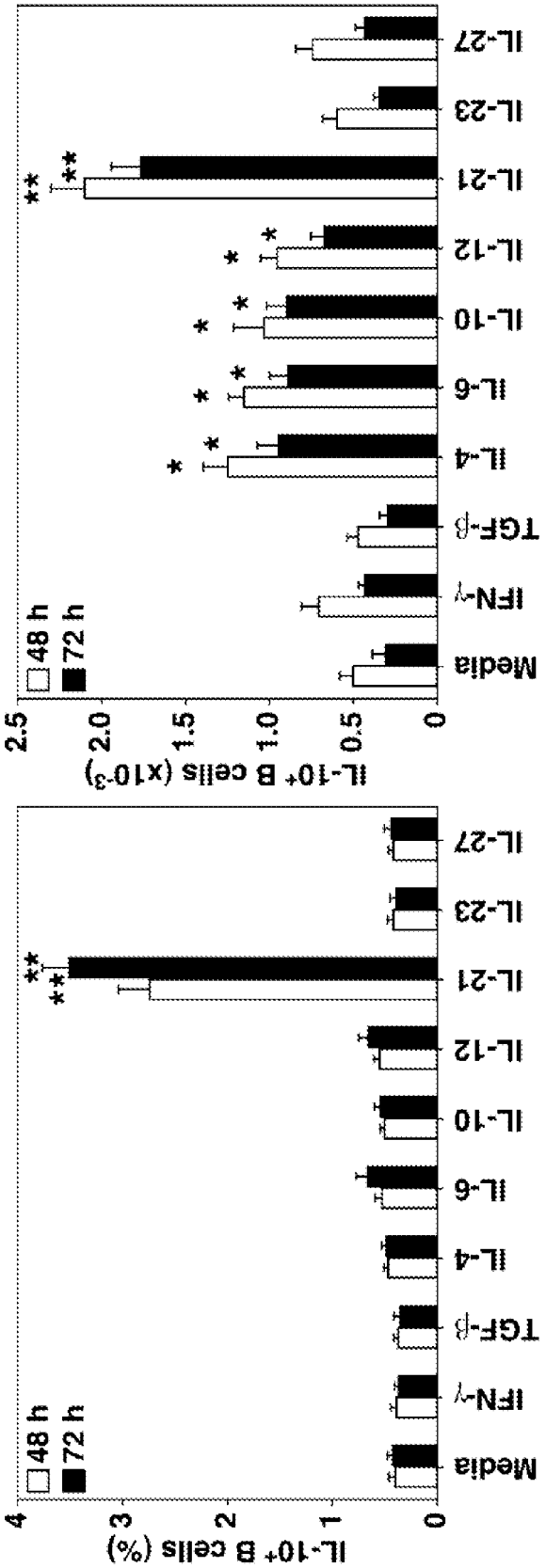

IL-10+ B cells (%)
48 h
72 h
Media
IFN-γ
TGF-β
IL-4
IL-6
IL-10
IL-12
IL-21
IL-23
IL-27
IL-10+ B cells (x10-3)

Fig. 5a

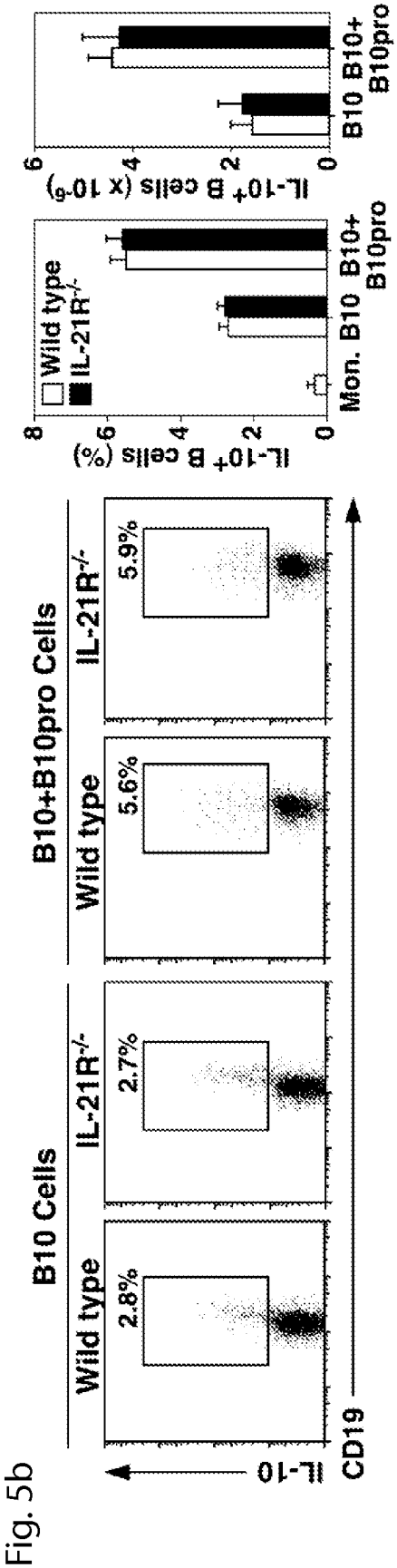
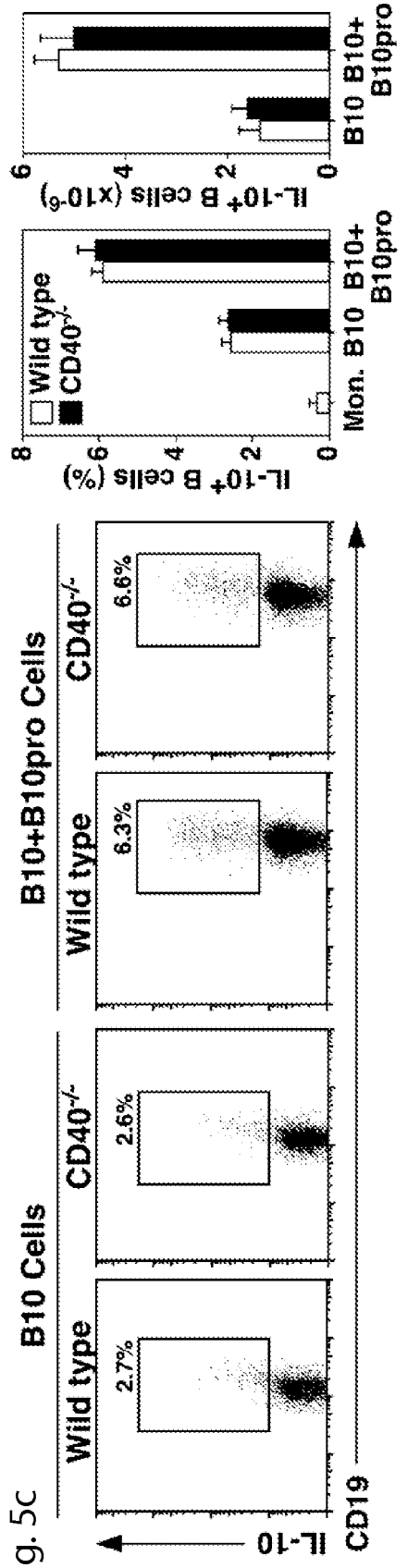
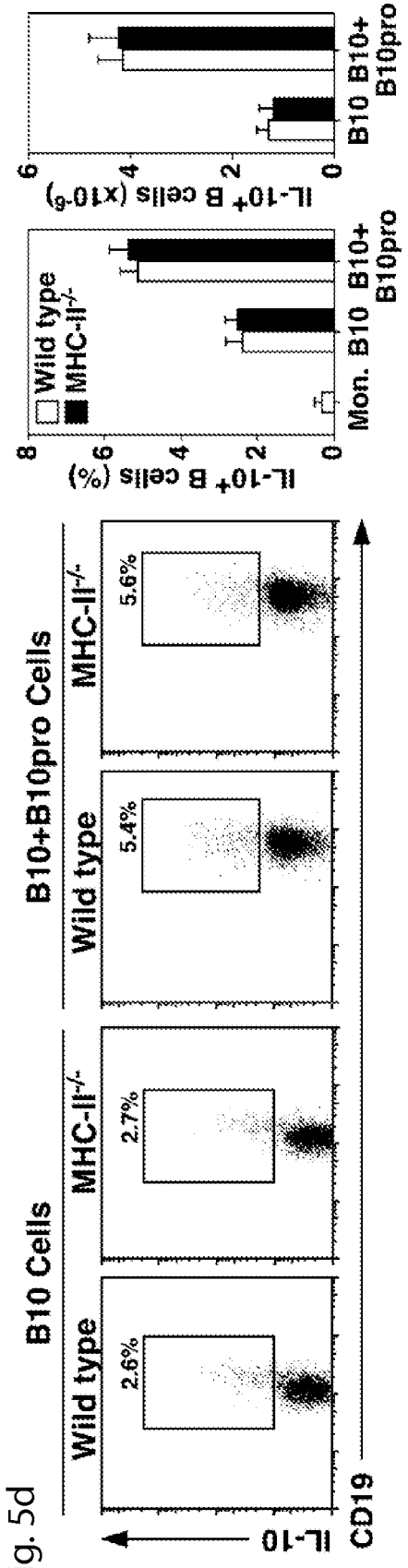

B10+B10pro Cells
B10 Cells
Wild type
IL-21R-/-
2.8%
2.7%
5.6%
5.9%
IL-10
CD19
IL-10+ B cells (%)
Wild type
IL-21R-/-
Mon. B10 B10+ B10pro
IL-10+ B cells (x 10-6)
B10 B10+ B10pro

Fig. 5b


Fig. 5c
B10 Cells
B10+B10pro Cells
Wild type
CD40-/-
2.7%
2.6%
6.3%
6.6%
IL-10
CD19
IL-10+ B cells (%)
IL-10+ B cells (x10-6)
Wild type
CD40-/-
Mon. B10 B10+ B10pro
B10 B10+ B10pro


Fig. 5d
B10 Cells
B10+B10pro Cells
Wild type
MHC-II-/-
2.6%
2.7%
5.4%
5.6%
IL-10
CD19
IL-10+ B cells (%)
IL-10+ B cells (x10-6)
Wild type
MHC-II-/-
Mon. B10 B10+ B10pro
B10 B10+ B10pro

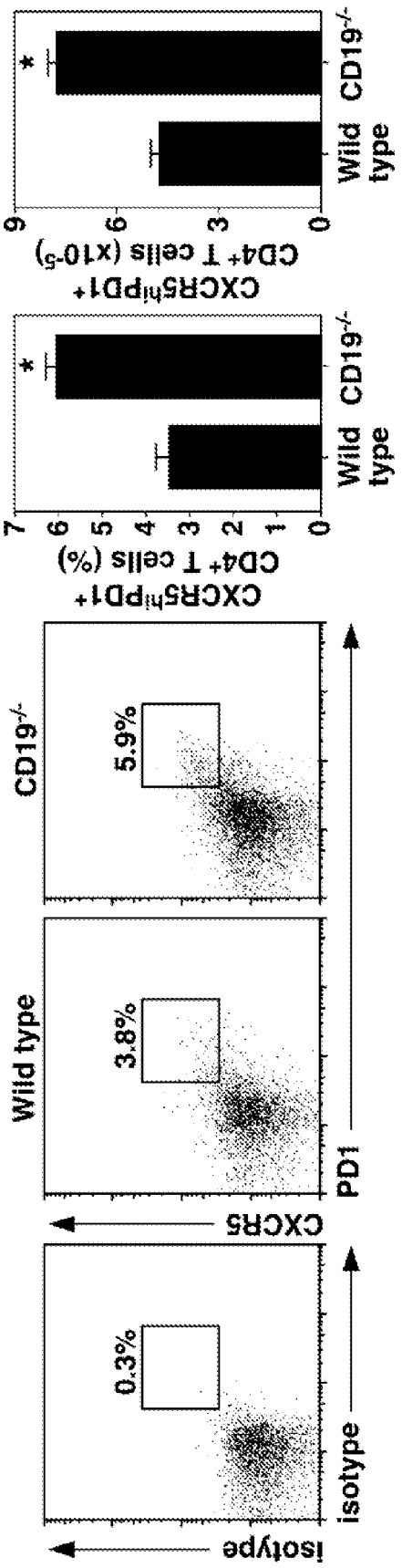

CXCR5hiPD1+
CD4+ T cells (%)
0
1
2
3
4
5
6
7
*
Wild type
CD19-/-
CXCR5hiPD1+
CD4+ T cells (x10-5)
0
3
6
9
*
Wild type
CD19-/-
isotype
CXCR5
PD1
CD19-/-
5.9%
Wild type
3.8%
0.3%

Fig. 6

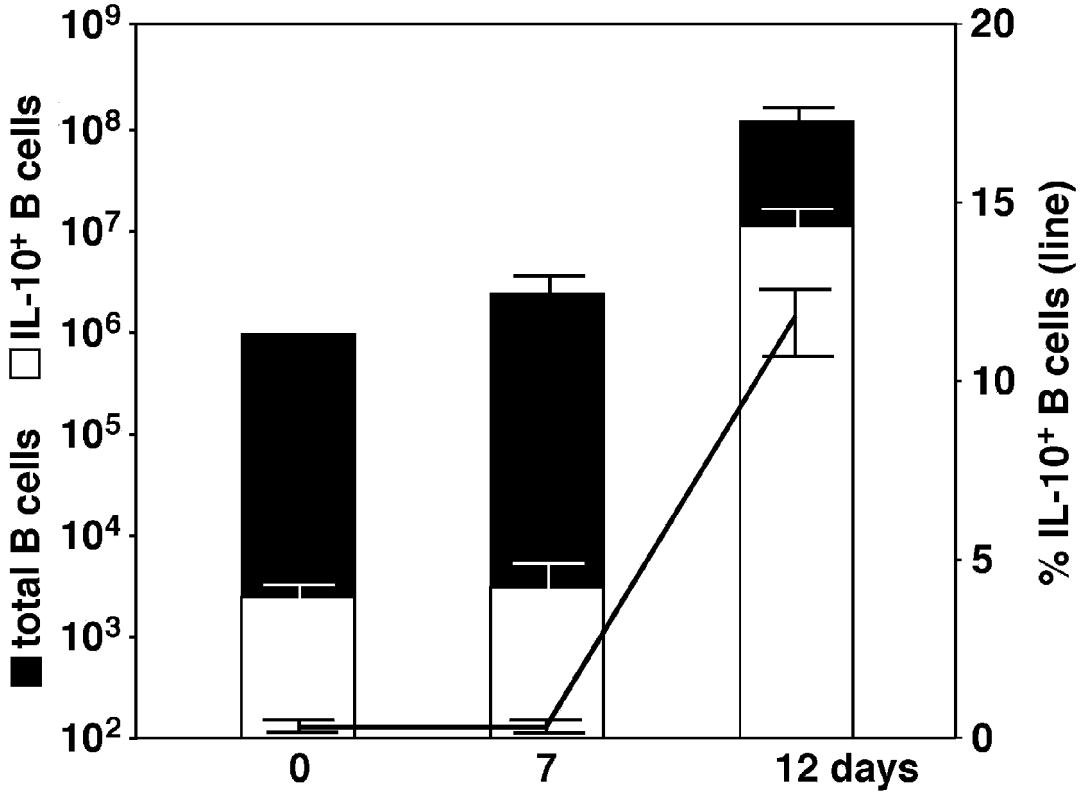

total B cells
IL-10+ B cells
% IL-10+ B cells (line)
10^9
10^8
10^7
10^6
10^5
10^4
10^3
10^2
20
15
10
5
0
0
7
12 days

Fig. 7

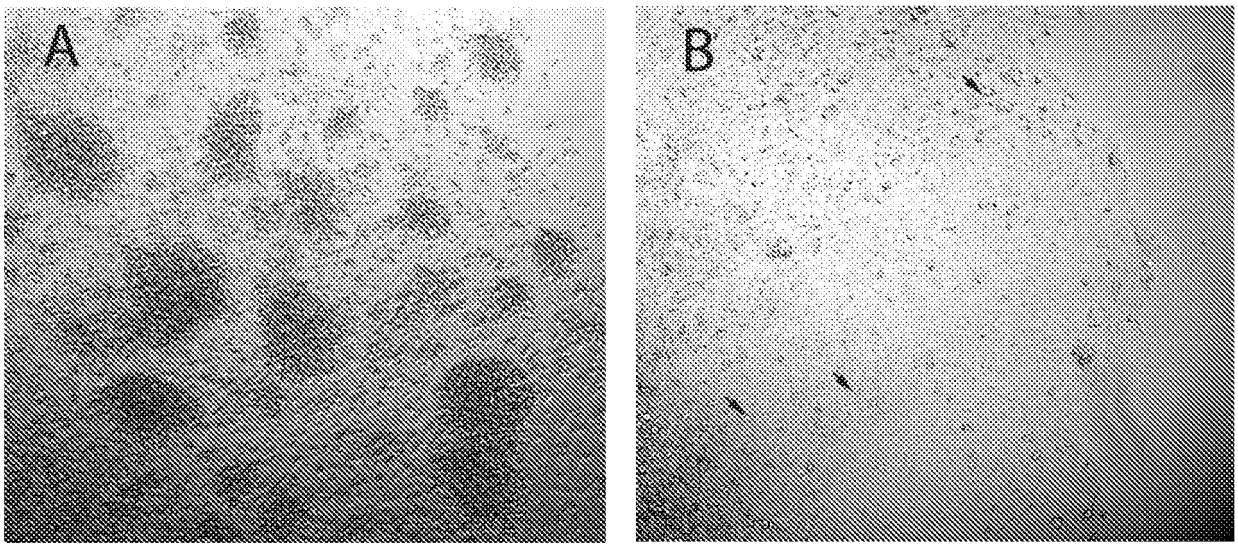

A
B

Fig. 8