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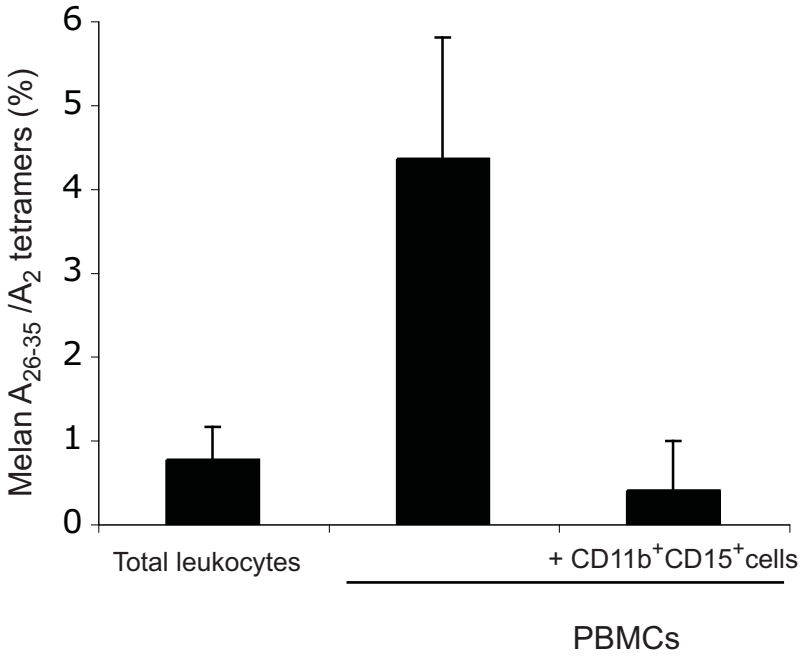

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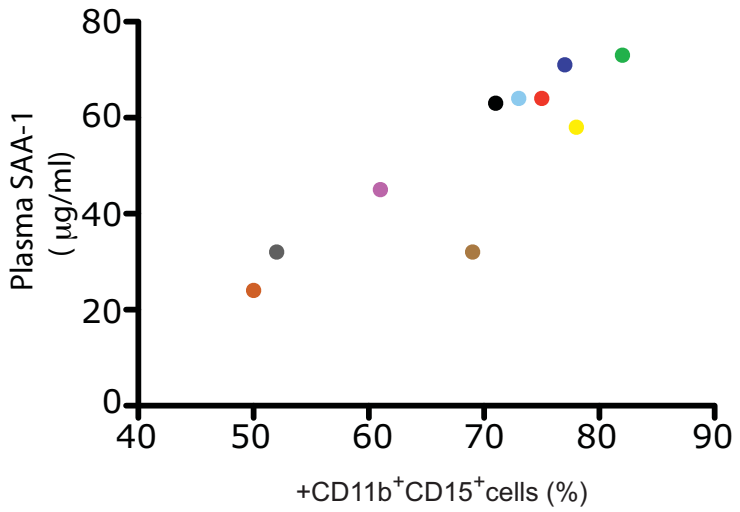

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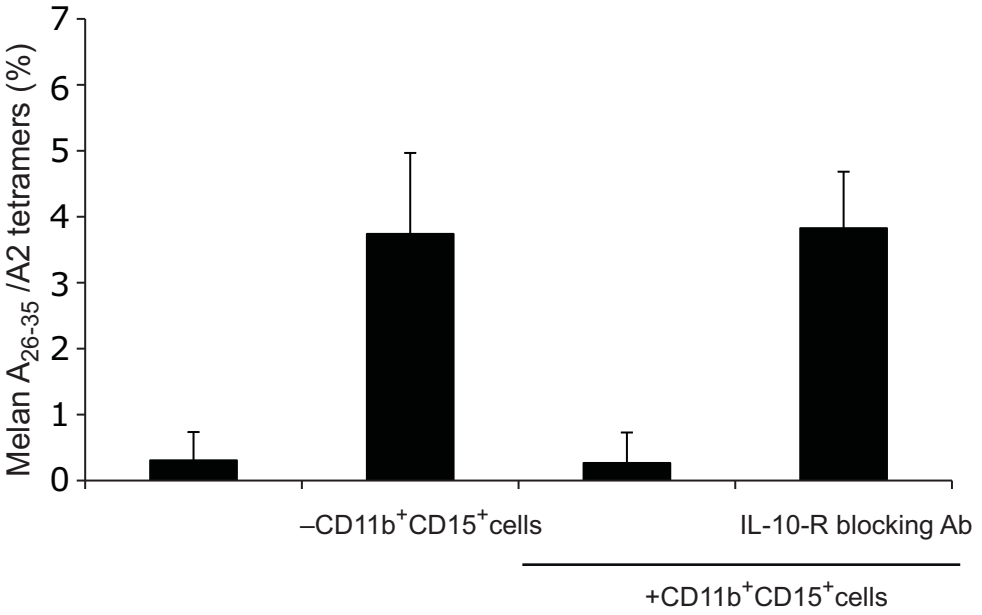
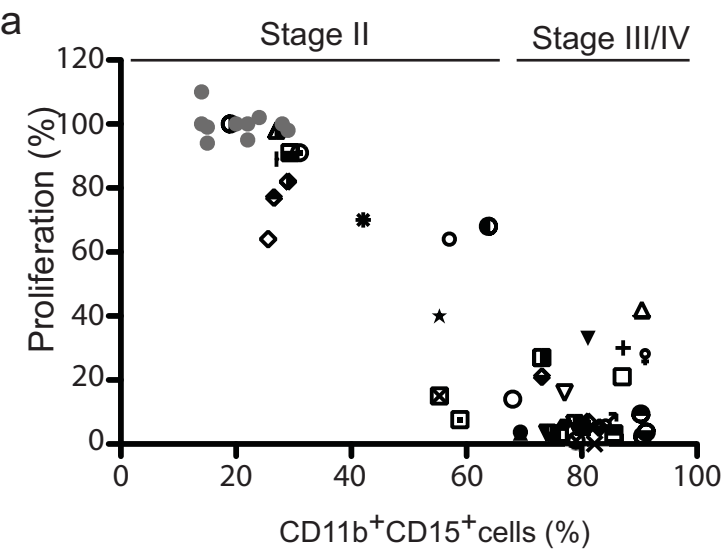
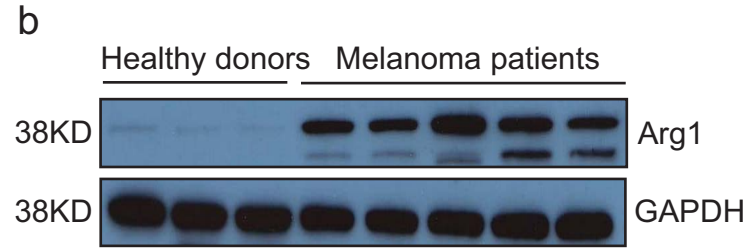


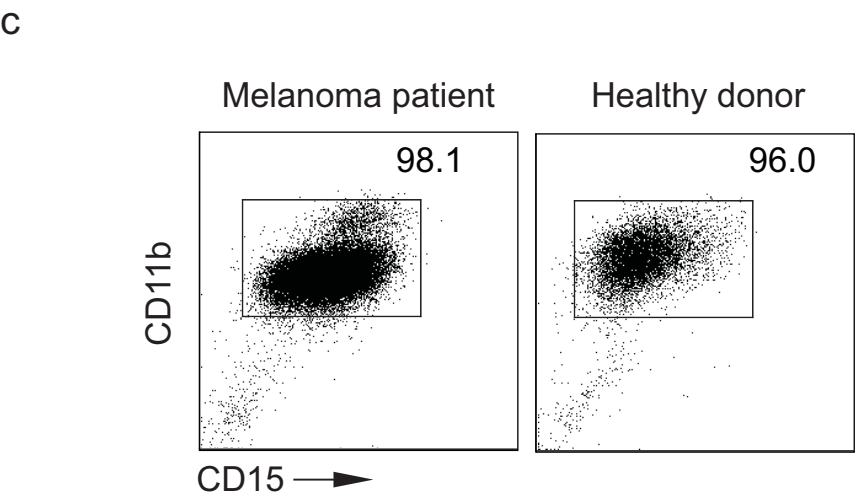
Supplementary Figure 1

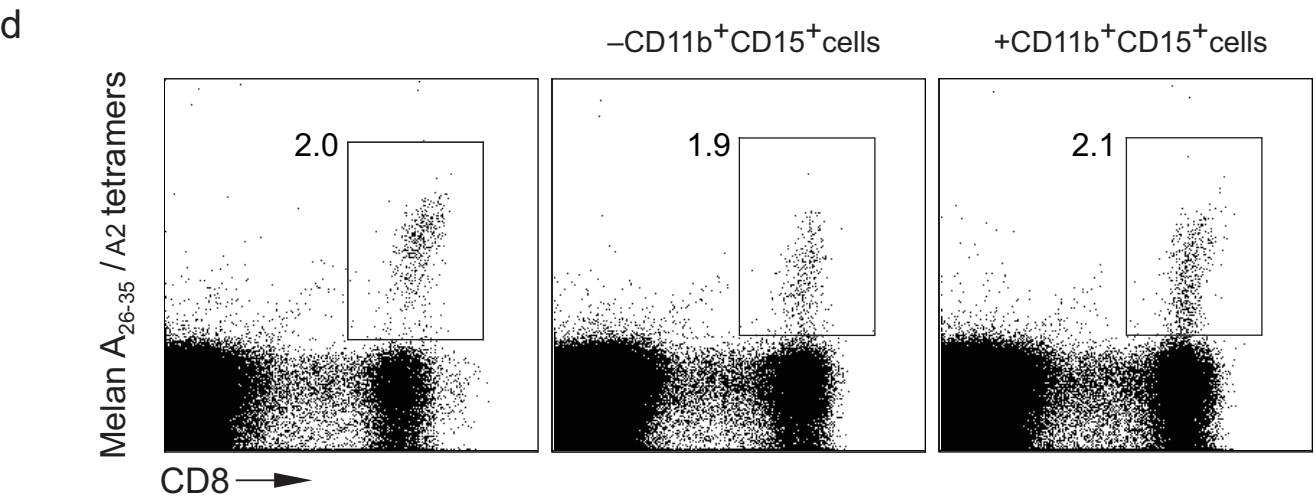
Supplementary Figure 1. Cumulative melan-A_{26-35} CD8+ T cell priming results obtained in the presence or absence of $CD11b^{+}CD15^{+}$ cells.

(**a**) Cumulative data showing expansion of melan-A_{26-35} specific $CD8^{+}$ T cells from PBMC or total leukocytes of seven HLA-$A2^{+}$ melanoma patients cultured for 10 days with autologous DC pulsed with melan-A_{26-35} peptide (error bars, SD). (**b**) Correlation between frequency of $CD11b^{+}CD15^{+}$ cells and SAA-1 plasma levels in samples from the same melanoma patients characterized for Melan-A_{26-35} specific $CD8^{+}$ T cell priming in (a). Each patient is represented by a unique color-coded symbol. (**c**) Cumulative data showing expansion of melan-A_{26-35} specific $CD8^{+}$ T cells from total leukocytes of three HLA-$A2^{+}$ melanoma patients (left). The same samples were depleted of $CD11b^{+}CD15^{+}$ cells and incubated with 10% autologous DC pulsed with melan-A_{26-35} peptide –$CD11b^{+}CD15^{+}$ cells, middle-left). Frequency of melan-A_{26-35} specific $CD8^{+}$ T cells after adding 10% purified $CD11b^{+}CD15^{+}$ cells to $CD11b^{+}CD15^{+}$ depleted total leukocytes (+$CD11b^{+}CD15^{+}$ cells) with (right) or without (middle-right) of blocking anti-IL10R antibody. Patients correspond to those in (b) shown in gray, brown and magenta (error bars, SD).









Supplementary Figure 2

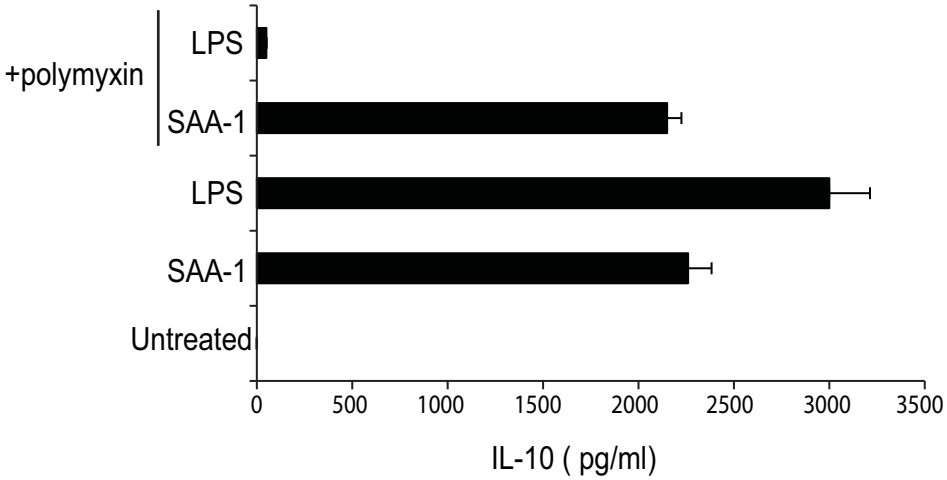
Supplementary Figure 2. High frequency of $CD11b^+CD15^+$ cells in melanoma patients correlate with their suppressive activity.

(**a**) Correlation between frequency of $CD11b^+CD15^+$ cells and their ability to suppress proliferation of alloreactive T cells (MLR) from 40 additional melanoma patients and 10 healthy volunteers (gray closed symbols). Each patient is represented by a unique symbol corresponding to those in **Fig. 2a** and **Supplementary Fig. 3**. Stage of disease is indicated. (**b**) Western blot with anti-arginase-1 antibody of lysates of $CD11b^+$ $CD15^+$ cells purified from healthy donors and melanoma patients. A loading control with GAPDH is shown. Patients analyzed correspond to patients identifiable in panel (a) by the unique symbols ⊗, △, ▲, ⊡, ○. (**c**) Percentage $CD11b^+CD15^+$ cells shown by staining with CD11b and CD15 antibodies of human neutrophils purified by magnetic sorting. (**d**) Percentage melan-A_{26-35} specific $CD8^+$ T cells after culturing total leukocytes from one healthy donor either depleted (middle) or not depleted (left) of $CD11b^+CD15^+$ cells and incubated with autologous DC pulsed with the melan-A_{26-35} peptide. Addition of purified $CD11b^+CD15^+$ cells to $CD11b^+CD15^+$ depleted total leukocytes does not reduce the expansion of melan-A_{26-35} specific $CD8^+$ T cells (right).

Supplementary Figure 3

Supplementary Figure 3. Concentration of several cytokines in the plasma of melanoma patients.

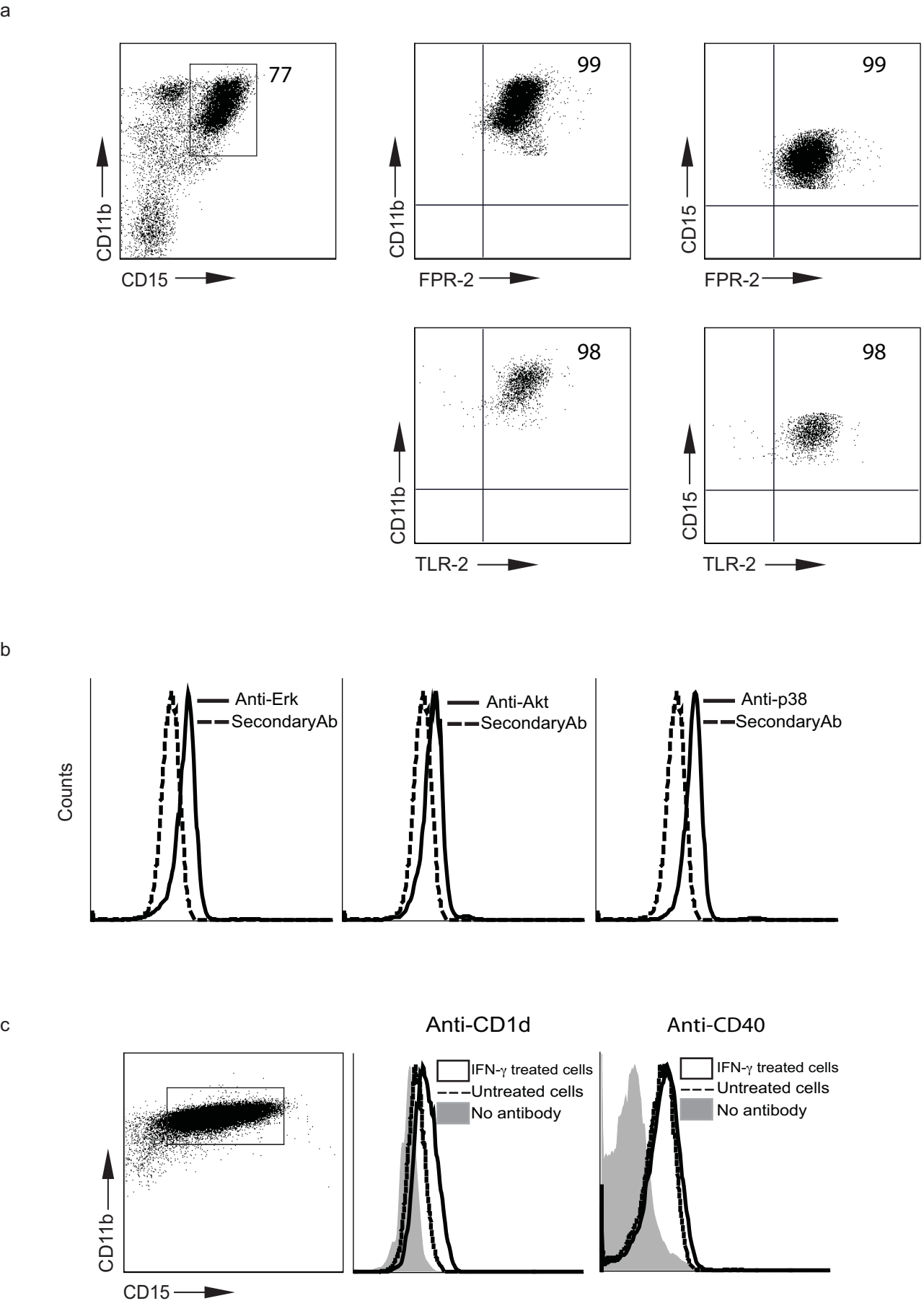
Plasma samples from 40 melanoma patients analyzed by MLR (**Supplementary Fig. 2a** and **Fig. 2a**) were tested by ELISA for a range of cytokines (red line, cytokine levels in plasma from healthy donors). Each patient is represented by a unique symbol.



Supplementary Figure 4

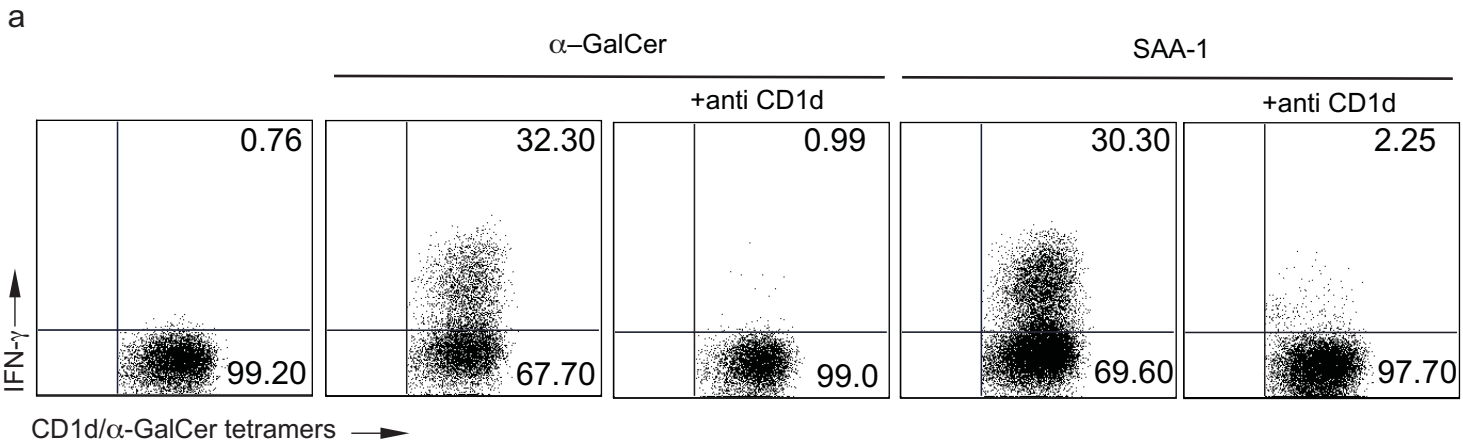
Supplementary Figure 4. Incubation of SAA-1 with polymyxin does not reduce the IL-10 inducing effect of SAA-1.

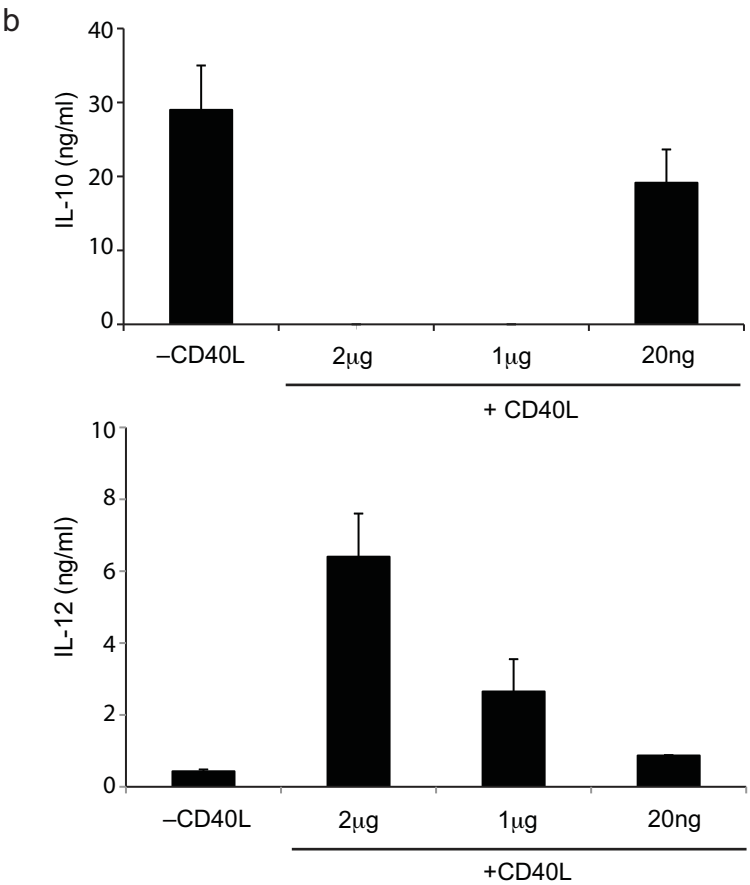
IL-10 secretion from $CD11b^{+}CD15^{+}$ cells from healthy donors incubated with SAA-1 (250 ng/ml) with or without the endotoxin removing compound polymyxin (10 μg/ml). As a control, $CD11b^{+}CD15^{+}$ cells were incubated with lipopolysaccharide (1 μg/ml) mixed with polymyxin. After 24 h, supernatants were collected and IL-10 secretion was measured by ELISA.

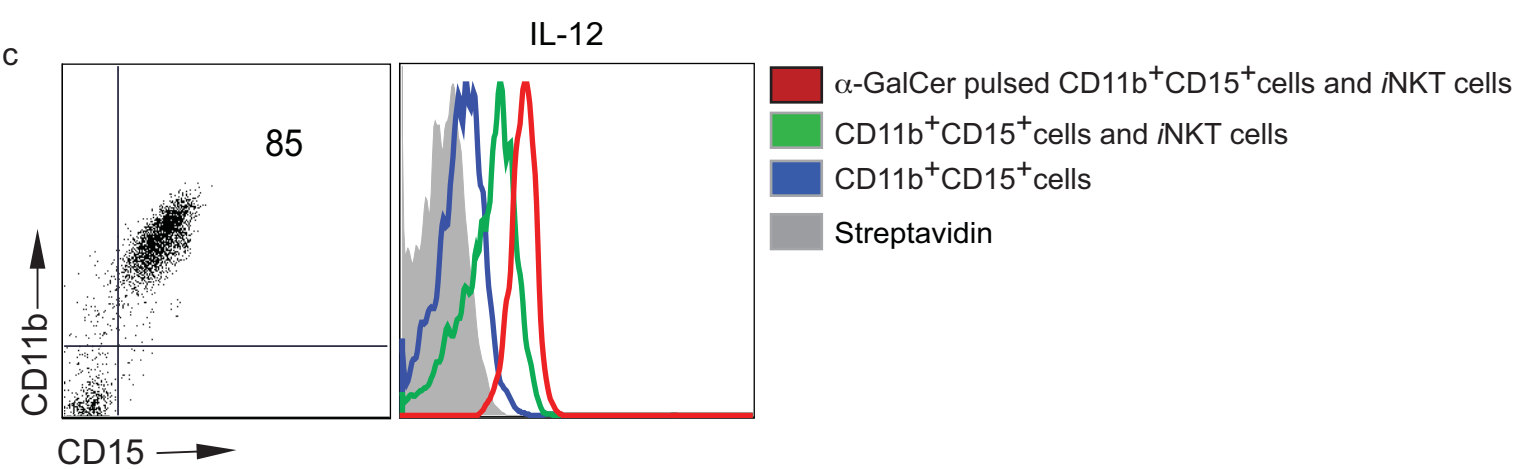


Supplementary Figure 5

Supplementary Figure 5. TLR-2 and FPR-2 expression on $CD11b^{+}CD15^{+}$ cells. (**a**) Total blood from melanoma patients was stained either with CD11b/CD15 and with anti-FPR-2 (top) or with anti-TLR-2 antibodies (bottom). (**b**) Intracellular staining of $CD11b^{+}CD15^{+}$ cells purified from melanoma patients with Erk, p38 and Akt specific antibodies. (**c**) $CD11b^{+}CD15^{+}$ cells purified from one melanoma patient stained with CD11b/CD15 antibodies and either with anti-CD1d, or anti-CD40 antibodies with or without IFN-γ for 24 h.



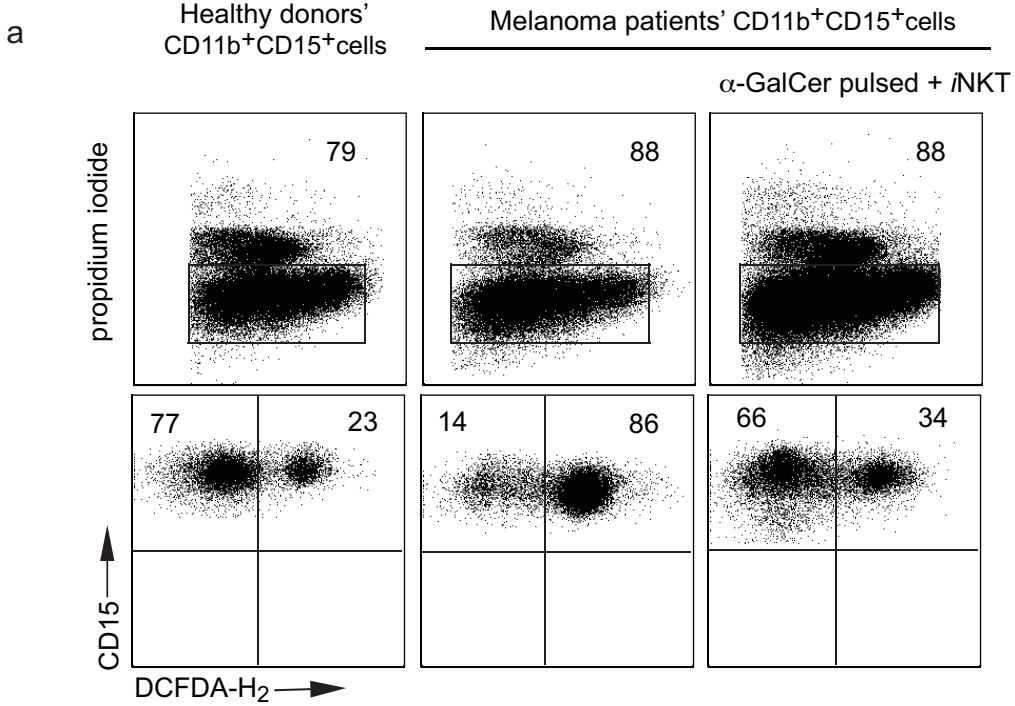


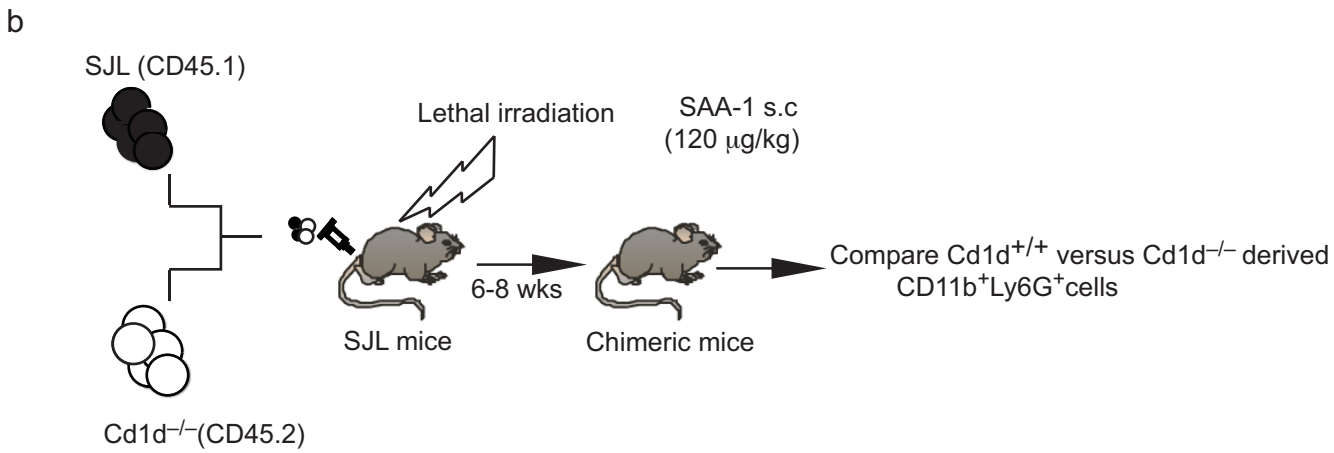


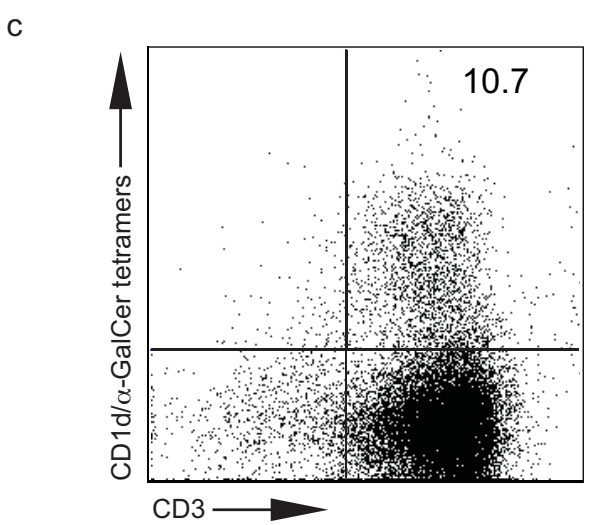
Supplementary Figure 6

Supplementary Figure 6. Co-incubation of SAA-1 treated $CD11b^+CD15^+$ cells with *i*NKT cells inhibits IL-10 production.

(**a**) Intracellular staining with anti IFN-γ antibody of CD1d/α-GalCer tetramer positive human *i*NKT cells co-cultured for 12 h with either α-GalCer or SAA-1 pulsed-$CD11b^+CD15^+$ cells from healthy donors. Incubation with a blocking CD1d antibody abolished *i*NKT cell activation. (**b**) IL-10 and IL-12 secretion from $CD11b^+CD15^+$ cells purified from melanoma patients and incubated with different concentrations of soluble CD40L for 24 h. Secretion of IL-10 and IL-12 in the absence of CD40 L (–CD40L) is shown. The patient analyzed in this experiment corresponds to the patient identifiable in **Fig. 2a** and **Supplementary Fig. 3** by the unique symbol ◆. (**c**) Intracellular staining with anti IL-12 antibody of α-GalCer pulsed or unpulsed $CD11b^+CD15^+$ cells purified from one representative melanoma patient and then incubated with *i*NKT cells at the ratio of 1:10 (*i*NKT : $CD11b^+CD15^+$ cells) for 24 h.







Supplementary Figure 7

Supplementary Figure 7. (a) Ability of *i*NKT cells to abolish ROS production from neutrophils from melanoma patients. Viability (as determined by propidium iodide staining) of α-GalCer pulsed or unpulsed $CD11b^+CD15^+$ cells (2×10^5) from one representative melanoma patient incubated with *i*NKT cells (10%). A control with $CD11b^+CD15^+$ cells from one healthy donor is shown. ROS production (as defined by the staining with DCFDA-H_2[59]) by α-GalCer pulsed or un-pulsed $CD11b^+CD15^+$ cells and incubated with *i*NKT cells. (**b**) Experimental design for engineering $Cd1d^{+/+}/Cd1d^{-/-}$ mixed bone marrow chimeric mice. (**c**) Selection of *i*NKT cells in $Cd1d^{+/+}/Cd1d^{-/-}$ mixed bone marrow chimeric mice. Frequency of *i*NKT cells in splenocytes of $Cd1d^{+/+}/Cd1d^{-/-}$ mixed bone marrow chimeric mice stained with CD1d/α-GalCer tetramers, anti-CD3 and anti-B220 antibodies. The frequency of $CD3^+$/α-GalCer CD1d $tetramer^+$ cells gated on the B220 negative population is shown.