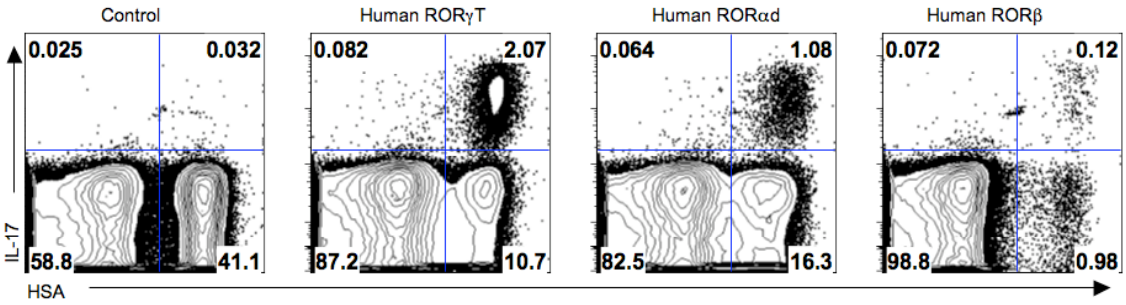
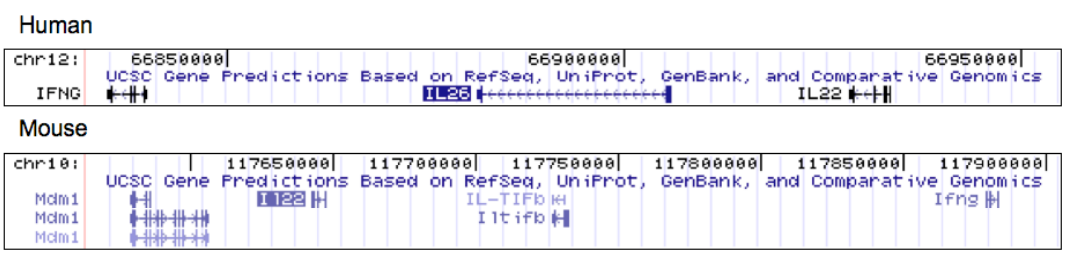


Supplementary Figure 1: IL-17 expression following RORγT, RORαd and RORβ transduction. Flow cytometry of naive cord blood $CD4^+$ T cells transduced with RORγT, RORαd and RORβ in RPMI-10% FBS alone. Intracellular IL-17 was analyzed at day 6. Numbers indicate the percentage of cells in each quadrant. Data are representative of three independent experiments.

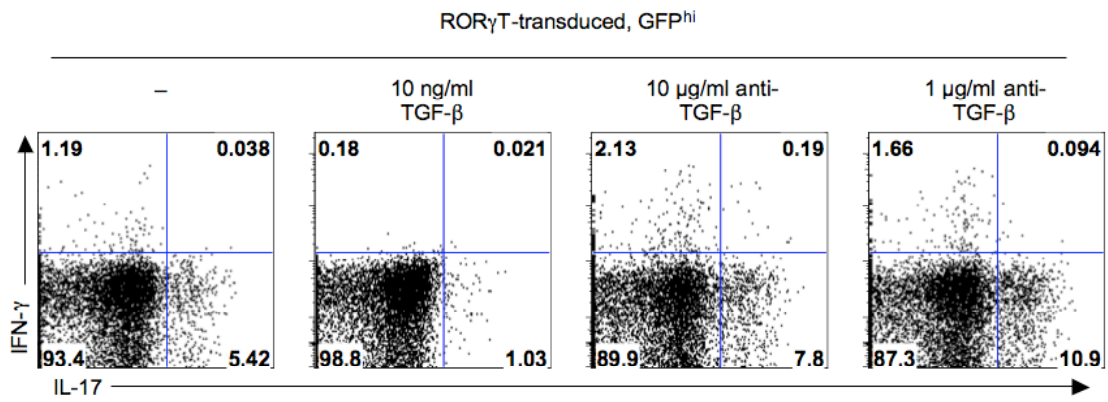
a



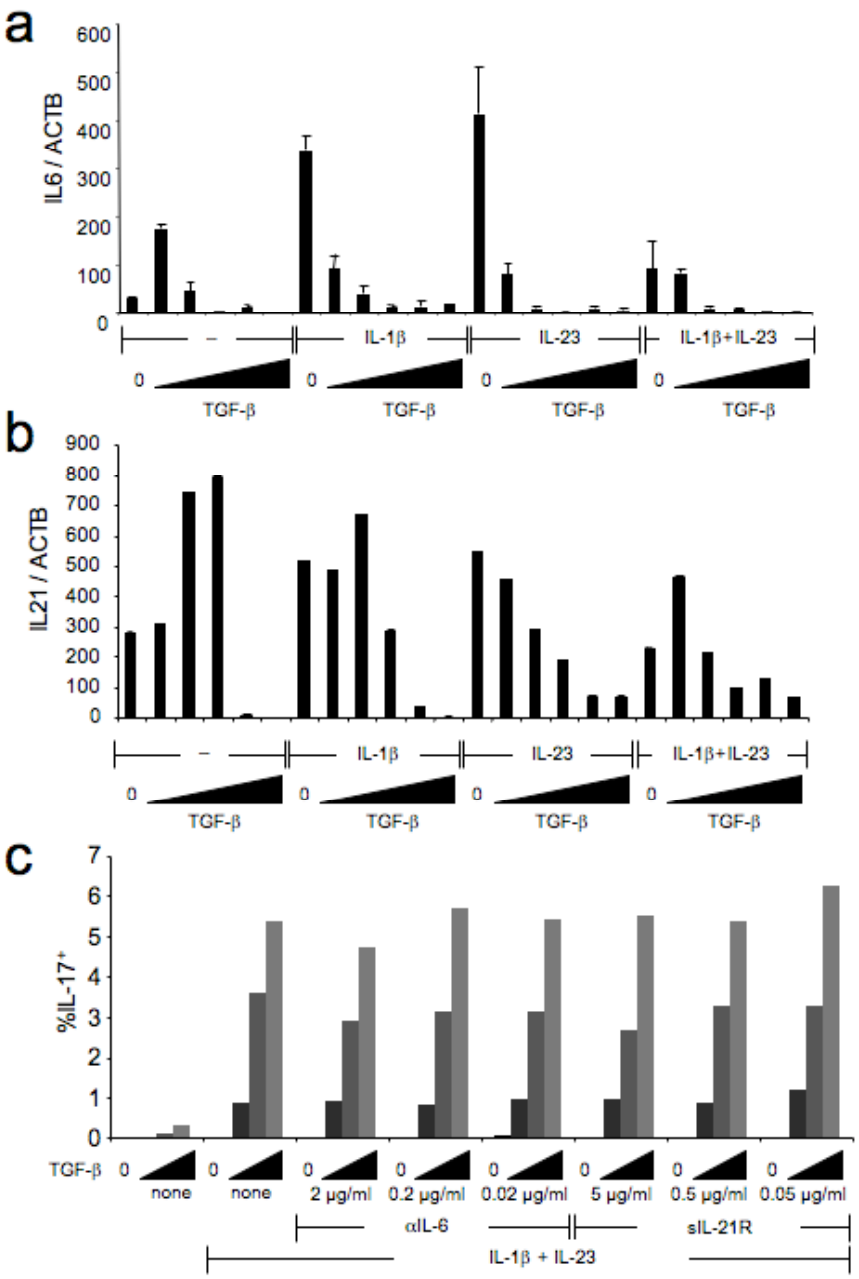
b

Species	Evidence for IL26 gene	Identity to human IL26 protein
Chimpanzee	XM_001152032	100%
Rhesus macaque	XM_001117154	95%
Cow	XM_001250651	86%
Pig	DQ995650	86%
Dog	XM_846075	81%
Rat	Not found	NA
Mouse	Not found	NA
Opossum	XM_001373815	57%
Platypus	XM_001511139	52%
Human IL22		*20%*

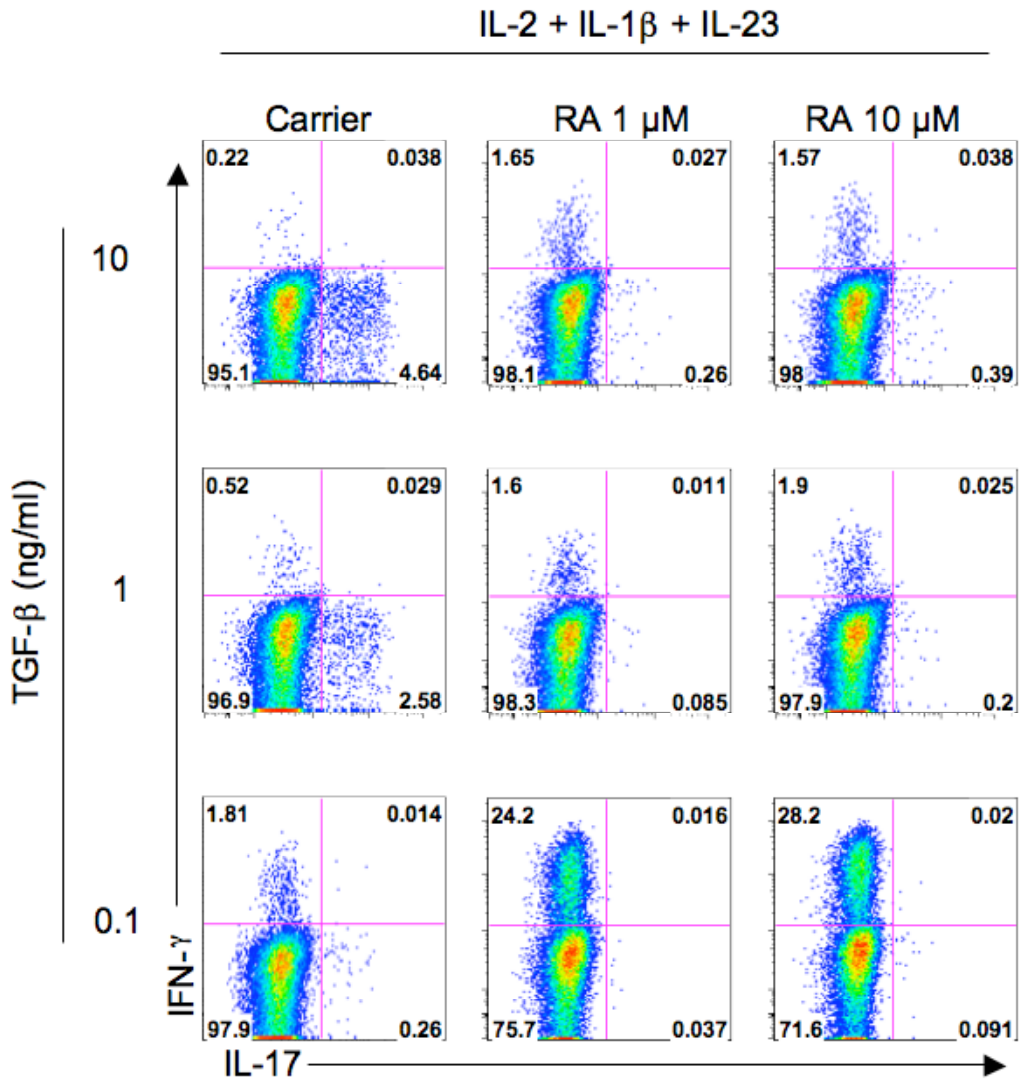
Supplementary Figure 2: *Il26* gene has been lost in mice and rats. (**a**) Genomic organization of the *IL22* locus based on UCSC genome browser. In humans, *IL22* is followed by *IL26* and *IFNG* in the same locus. In the mouse, *Il22* is followed by *Iltifb* (a duplication of *Il22*) and *Ifng*, while *Il26* is absent. (**b**) Among species, *IL26* can be detected in pre-placental vertebrates, but cannot be found in the mouse or rat genome. GenBank accession numbers and amino acid identity to human IL-26 are indicated. Human IL-22 is shown for comparison.



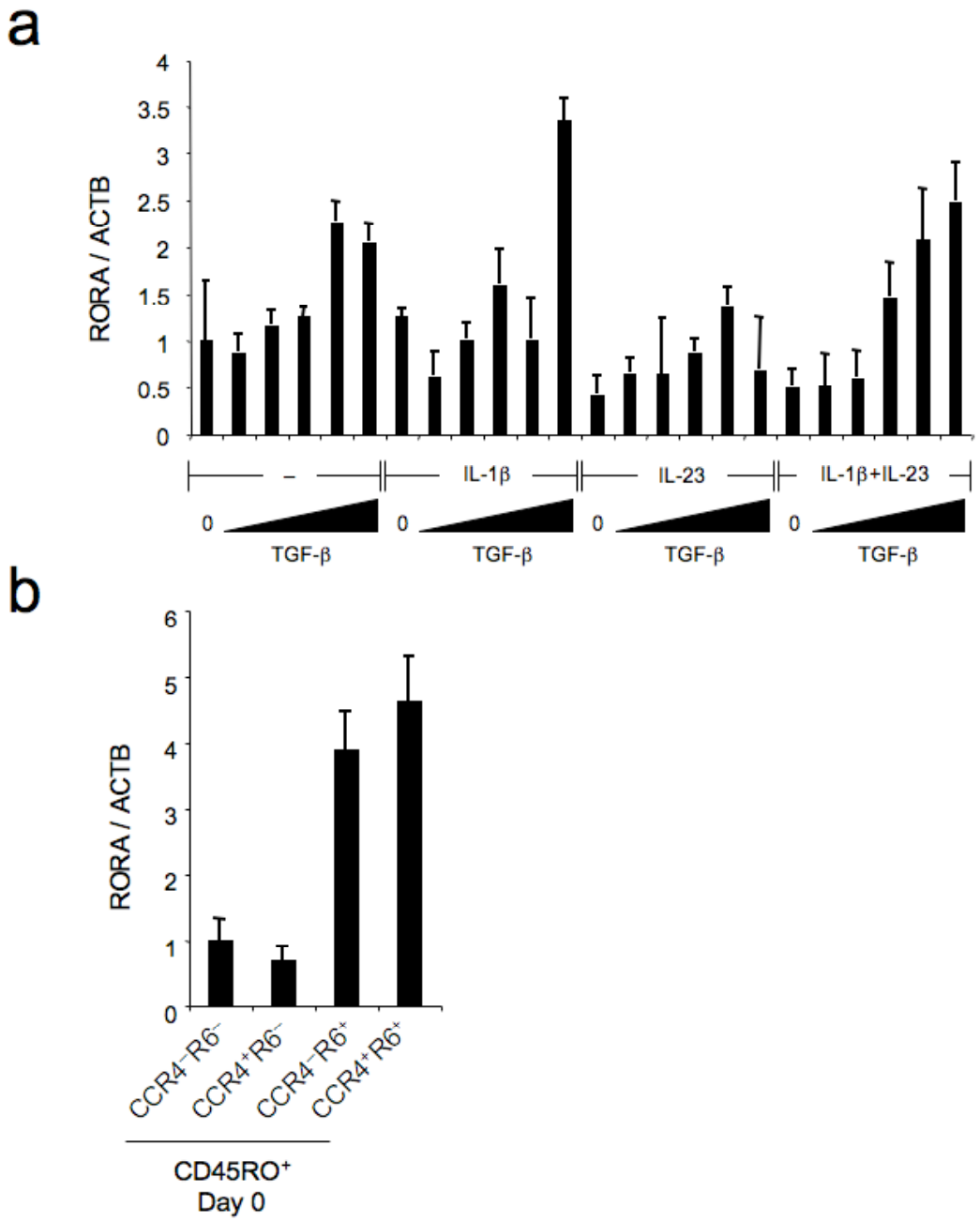
Supplementary Figure 3: TGF-β, anti-TGF-β effect on IL-17 expression following RORγT transduction. Flow cytometry of naive cord blood $CD4^+$ T cells in serum-containing medium transduced with a lentivector expressing RORγT and GFP and no added cytokine (left) or with added recombinant TGF-β (second from left) or two concentrations of anti-TGF-β (two right panels). IL-17 and IFN-γ expression was analyzed at day 6 in GFP^{hi} cells. Data are representative of three independent experiments.



Supplementary Figure 4: Expression and neutralization of IL-6 and IL-21. (**a,b**) Quantitative RT-PCR of *ACTB* (**a**) and *IL21* (**b**) mRNA in naive cord blood $CD4^+$ T cells were cultivated with IL-2 alone or with IL-1β + IL-2, IL-23 + IL-2 or IL-23 + IL-1β + IL-2 and increasing concentrations of TGF-β; mRNAs were analyzed on day 6 following restimulation with PMA and ionomycin. (**c**) Graph of the percent of $IL\text{-}17^+$ in naive cord blood $CD4^+$ T cells cultivated with IL-2 alone or with IL-23 + IL-1β + IL-2 and increasing concentrations of TGF-β, as determined by flow cytometry. Increasing concentrations of neutralizing anti-IL-6 and soluble IL-21 receptor were also added. IL-17 expression was analyzed at day 6. Data are representative of two independent experiments.



Supplementary Figure 5: Retinoic acid inhibits IL-17 induction. Flow cytometry of naive cord blood $CD4^+$ T cells activated with a combination of IL-2 + IL-1β + IL-23 + TGF-β (0.1, 1 and 10 ng/ml), without (left) or with retinoic acid (1 μM (middle) and 10 μM (right)). IL-17 and IFN-γ expression was analyzed at day 6. Data are representative of three independent experiments.



Supplementary Figure 6: Expression of RORA. (**a**) Quantiative RT-PCR of *ACTB* and *RORA* mRNA in naive cord blood $CD4^+$ T cells cultivated in IL-2 alone or, IL-1β + IL-2, IL-23 + IL-2 or IL-23 + IL-1β + IL-2 and increasing concentrations of TGF-β; mRNAs were analyzed on day 6. (**b**) Quantiative RT-PCR of *RORA* and *ACTB* expression measured in freshly sorted $CCR4^{-/+}CCR6^{-/+}$ adult memory $CD4^+$ T cells. Data are representative of four independent experiments.

Supplementary Table 1: Antibodies used in this study.

Antigen	Clone or Catalog number	Company
CCR6-FITC	FAB196F	R&D
CCR6-biotin	11A9	BD
CD3-Alexa750Cy7	UCHT1	eBioscience
CD4-PacBlue	OKT4	eBioscience
CD25-APC	555434	BD
CD45RA-PE	HI100	eBioscience
CD45RO-APC	UCHL1	eBioscience
IL-17-APC	eBio64CAP17	eBioscience
IL-17-FITC	eBio64DEC17	eBioscience
IL-22-PE	IC7621P	R&D
IFNγ-PECy7	45.B3	eBioscience
HLA-DR-FITC	555558	BD
HSA-PE (mCD24)	553262	eBioscience
CD3 purified	UCHT1	eBioscience
CD28 purified	CD28.2	eBioscience
TGF-β purified	1D11	R&D
IL-2 purified	5334.21	R&D
IL-4 purified	MP425D2	eBioscience
IL-6 purified	MQ2-13A5	eBioscience
IFNγ purified	NIB42	eBioscience

Supplementary Table 2: Oligonucleotides used in this study.

Gene	Orientation	Sequence
ACTB	F	GGACTTCGAGCAAGAGATGG
ACTB	R	AGCACTGTGTTGGCGTACAG
ACTB	Probe	CTCTTCCAGCCTTCCTTCCT
RORA	F	CGGTGCCTTTGACTCTCAGAACAACACCG
RORA	R	TCTTTCCAAATTCAAACACAAAGC
RORA	Probe	TTGATGGGAAGTATGCCAGC
RORC	F	TTTTCCGAGGATGAGATTGC
RORC	R	CTTTCCACATGCTGGCTACA
RORC	Probe	AAGACTCATCGCCAAAGCAT
IL23R	F	CATGACTTGCACCTGGAATG
IL23R	R	GCTTGGACCCAAACCAAGTA
IL23R	Probe	TGATTCATTACAAGGTGGCAA
IL17F	F	TGAAGCTTGACATTGGCATC
IL17F	R	TTCCTTGAGCATTGATGCAG
IL17F	Probe	ACCTCCCCCTGGAATTACAC
IL17	F	ACCAATCCCAAAAGGTCCTC
IL17	R	GGGGACAGAGTTCATGTGGT
IL17	Probe	GCAATGAGGACCCTGAGAGA
IL26	F	TGCAAGGCTGCAAGAAAATA
IL26	R	CCAGTTCACTGATGGCTTTG
IL26	Probe	GGCAGAAATTGAGCCACTGT
IL6	F	AAAGAGGCACTGGCAGAAAA
IL6	R	TTTCACCAGGCAAGTCTCCT
IL21	F	TTCTGCCAGCTCCAGAAGAT
IL21	R	TTGTGGAAGGTGGTTTCCTC
IL21	Probe	TGGTCAGCTTTTTCCTGCTT