Table S1. Primers used to quantitatively amplify the human miRNAs precursors and indicated genes

	Forward primer (5′→3′)	Rervese primer (5′→3′)
U6	CTCGCTTCGGCAGCACA	AACGCTTCACGAATTTGCGT
5S	TACGGCCATACCACCCTGAA	TAACCAGGCCCGACCCTGCT
let-7d	AGAGGTAGTAGGTTGCATAGTT	
miR-101#	**AAAAAA**TACAGTACTGTGATAACTGAA	
miR-106a	AAAAGTGCTTACAGTGCAGGTAG	
miR-106b#	**AAA**TAAAGTGCTGACAGTGCAGAT	
miR-10a	TACCCTGTAGATCCGAATTTGTG	
miR-130b	CAGTGCAATGATGAAAGGGCAT	
miR-142-3p#	**AAA**TGTAGTGTTTCCTACTTTATGGA	
miR-142-5p#	**AAAA**CATAAAGTAGAAAGCACTACT	
miR-146a#	**AAA**TGAGAACTGAATTCCATGGGTT	
miR-146b	TGAGAACTGAATTCCATAGGCT	
miR-155	TTAATGCTAATCGTGATAGGGGT	
miR-15a	TAGCAGCACATAATGGTTTGTG	
miR-16	TAGCAGCACGTAAATATTGGCG	
miR-17	CAAAGTGCTTACAGTGCAGGTAG	
miR-184	TGGACGGAGAACTGATAAGGGT	
miR-18a	TAAGGTGCATCTAGTGCAGATAG	
miR-193a	TGGGTCTTTGCGGGCGAGATGA	
miR-195	CCAATATTGGCTGTGCTGCTCC	
miR-198	GGTCCAGAGGGGAGATAGGTTC	
miR-199a*	ACAGTAGTCTGCACATTGGTTA	
miR-19a#	**AAA**TGTGCAAATCTATGCAAAACTGA	
miR-19b#	**A**TGTGCAAATCCATGCAAAACTGA	
miR-206	TGGAATGTAAGGAAGTGTGTGG	
miR-20b	CAAAGTGCTCATAGTGCAGGTAG	
miR-21	TAGCTTATCAGACTGATGTTGA	
miR-214#	ACAGCAGGCACAGACAGGCAG	
miR-22	AAGCTGCCAGTTGAAGAACTGT	
miR-221	AGCTACATTGTCTGCTGGGTTTC	
miR-222	AGCTACATCTGGCTACTGGGTC	
miR-23a	ATCACATTGCCAGGGATTTCC	
miR-25	CATTGCACTTGTCTCGGTCTGA	
miR-26a	TTCAAGTAATCCAGGATAGGCT	
miR-29a	TAGCACCATCTGAAATCGGTTA	
miR-29C#	**A**TAGCACCATTTGAAATCGGTTA	
miR-30a	TGTAAACATCCTCGACTGGAAG	
miR-30b	TGTAAACATCCTACACTCAGCT	
miR-30e-3p	CTTTCAGTCGGATGTTTACAGC	
miR-30e-5p#	**AAA**TGTAAACATCCTTGACTGGA	
miR-31	AGGCAAGATGCTGGCATAGCT	
miR-338	AACAATATCCTGGTGCTGAGTG	
miR-342	AGG GGT GCT ATC TGT GAT TGA	
miR-34b	CAATCACTAACTCCACTGCCAT	
miR-363*	CGG GTG GAT CAC GAT GCA ATT T	
miR-373*	ACTCAAAATGGGGGCGCTTTCC	

	Forward primer (5′→3′)	Rervese primer (5′→3′)
miR-374a#	**AAAA**TTATAATACAACCTGATAAGTG	
miR-422b	CTGGACTTGGAGTCAGAAGG	
miR-424#	**AAA**CAGCAGCAATTCATGTTTTGAA	
miR-451#	**A**AAAAAACCGTTACCATTACTGAGTT	
miR-523	GAACGCGCTTCCCTATAGAGGGT	
miR-549#	**AAAAA**TGACAACTATGGATGAGCTCT	
miR-552#	**AAA**AACAGGTGACTGGTTAGACAA	
miR-569#	**AAAA**AGTTAATGAATCCTGGAAAGT	
mR-656#	**AAAA**AAAATATTATACAGTCAACCTCT	
miR-765	TGGAGGAGAAGGAAGGTGATG	
miR-768#	GTTGGAGGATGAAAGTACGGAGTG	
miR-92	TATTGCACTTGTCCCGGCCTG	
miR-93	CAAAGTGCTGTTCGTGCAGGTAG	
miR-95#	**AA**TTCAACGGGTATTTATTGAGCA	
miR-98#	**AAA**TGAGGTAGTAAGTTGTATTGTT	
LV-miR-155WT	GAGGATCC TAAAGGTAACAATGTCATCT	GAGGTCGACGAATATATTTTCTGTTAATG
LV-miR -155MUT@	***AATTACGA***AATCGTGATAGGGGTTTTTGCC	ACCCCTATCACGATT***TCGTAATT***CAGCATA
pGL-KPC1-WT	AACGCTAGCCTGGAACCTCCACCTTTGAA	AAGCTCGAGTGTATGGAATAATAATTTAATGCTCAC
pGL-KPC1-MUT	AACGCTAGCCTGGAACCTCCACCTTTGAA	TAGCTCGAGTGTATGGAATAATAATAATTTGCTCAC
pGL-CD115-WT	GATCTCGAGCAAACTCTGCCTTCGGTCAT	GATGTCGACTTAATGCTGTTAGTTTAATGTGGACAGA
pGL-CD115-MUT	GATCTCGAGCAAACTCTGCCTTCGGTCAT	GATGTCGACAATTACCTGTTAGTTTAATGTGGACAGA
pGL-SOCS-1-WT	AATGCTAGCCCGGCAGCGCCCGCCGTGC	CATCTCGAGCTGCACAGCAGAAAAATAAAGC
pGL-SOCS-1-MUT	AATGCTAGCCCGGCAGCGCCCGCCGTGC ACGCAGCAAATTCT	
GAPDH	GTCATCCCTGAGCTAGACGG	GGGTCTTACTCCTTGGAGGC
GM-CSFR CD115	GCA TTC CTC CTG ATC CCA GA CTAGGGACATCATGAATGACTC	CCT GGA GTC AAA CCT CAC ATT G GTTTATAGAACTTGCTGTTCACC

Note: # primers were designed by adding A at the 5′ end (in bold) or truncating several bases at the 3′ end to obtain a melting temperature (Tm) of 55–68°C according to the manual for Ncode™ miRNA First-Strand cDNA Synthesis kit. @ The seeding region sequence of miR-155 was mutated in the forward and reverse primers (in italic bold). These two primers together with primers for LV-miR-155WT were used to generate LV-miR-155MUT. Restriction enzyme sites in primers were underlined.

Figure S1. miRNA expression analysis in human monocytes, imDCs and mDCs
Shown are scatter plots of normalized miRNA microarray data for monocyte versus imDC (A), monocyte versus mDC (B), and imDC versus mDC (C). Dots represent individual miRNAs, and those for miR-221 and miR-155 are indicated by arrows.

Figure S2. Reduced secretion of IL-12p70 by mDCs from miR-155$^{-/-}$ mice
BM derived imDCs (2.5×10^5 per well) at day 6 from WT or miR-155$^{-/-}$ (KO) mice were cultured in 24-well plates in 1 mL RPMI1640 culture medium supplemented with mGM-CSF (20 ng/mL). Cells were treated with LPS (0.25 μg/ml) for 24 h. Supernatants were harvested and IL-12p70 was measured by ELISA. The data are means with 95% confidence intervals from three independent experiments. ** $P<0.01$ by two sample t test.

Figure S3. SOCS-1 is a target of miR-155
(A) Multiple species sequence alignment of the SOCS-1 3′ UTR including the predicted miR-155 target site sequence (in bold). Mutation of the miR155 target site sequence is shown below. (B) Luciferase reporter assays to confirm SOCS-1 3′ UTR targeting by miR-155. The columns represent normalized relative luciferase activity (RLU) by means with 95% confidence intervals from two independent experiments. ** $P<0.01$ by two sample t test.

Figure S4. Over-expression of miR-155 in DCs significantly increases IL-12 production after stimulation with potent IL-12 inducers
(A) Enhanced IL-12 production in DCs after over-expression of miR-155 and stimulation with LPS + R848 and poly(I:C) + the cocktail.[1,2] ImDCs at day 5 from two donors were transfected with 40 nM of miR-155 or negative control. 6 h later, cells were treated with the LPS [0.1 μg/mL, cat# L2654, Sigma] + imidazoquinoline compound R848 (2.5 μg/mL, InvivoGen) or poly(I:C) (20 μg/mL, InvivoGen) + the cocktail in AIM V serum free medium supplemented with human GM-CSF and IL-4 for 16 h. Supernatants were harvested and IL-12p70 was measured by ELISA. The data are mean ± SEM from three replicates. ** $P<0.01$ by two sample t test. (B) Flow cytometric analysis of CD83 maturation marker in DCs after over-expression of miR-155 and stimulation with LPS + R848 and poly(I:C) + the cocktail for 16 h. Unfilled histogram indicates an isotype control.

REFERENCES

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2. Hemmi H, Kaisho T, Takeuchi O, Sato S, Sanjo H, Hoshino K, et al. Small anti-viral compounds activate immune cells via the TLR7 MyD88-dependent signaling pathway. *Nat Immunol* 2002; 3(2):196–200.

Figure S1

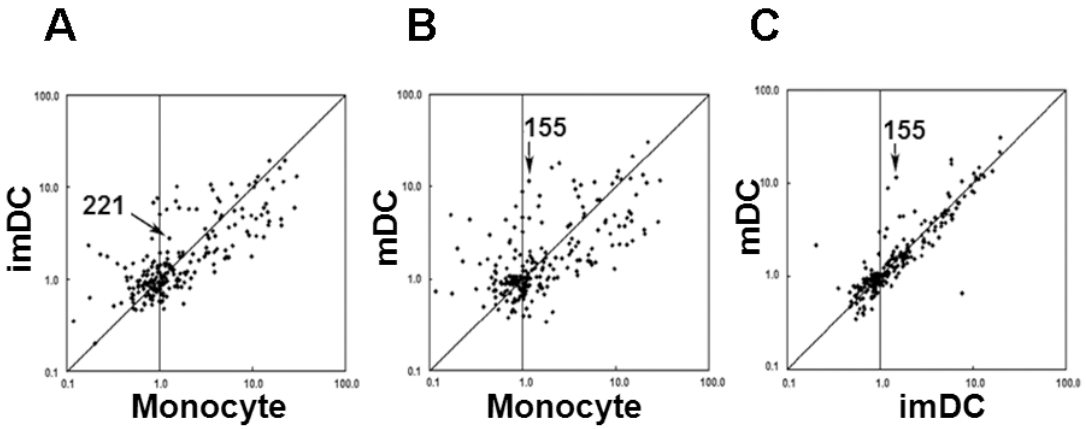


Figure S2

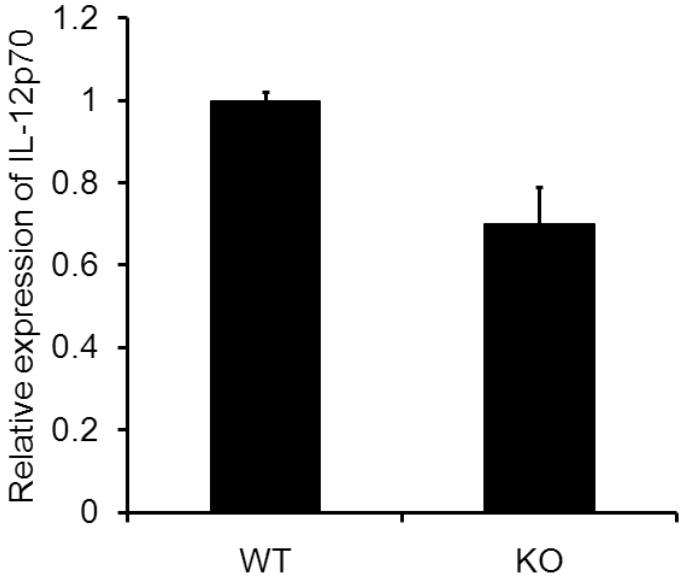


Figure S3

A

```
Hsa-miR-155MUT   3' tggggauagugcuaaAGCAUUAA 5'
Hsa-miR-155WT    3' tggggauagugcuaaUCGUAAUU 5'
                     |||        |      | | | | | | | |
Human              - gcccgccgtgcacgcAGCATTAActg-
Mouse              - - -ccgctgtgcc-gcAGCATTAAgtg-
Rat                - - -ccgccgtgcccgcAGCATTAAgtg-
Dog                - - - - - - -cgcgcacgcAGCATTAActc-
Chicken            - - - - - - - - - - - -gtacAGCATTAActg-
                                           AATT
                                   Mutant 3'UTR
```

B

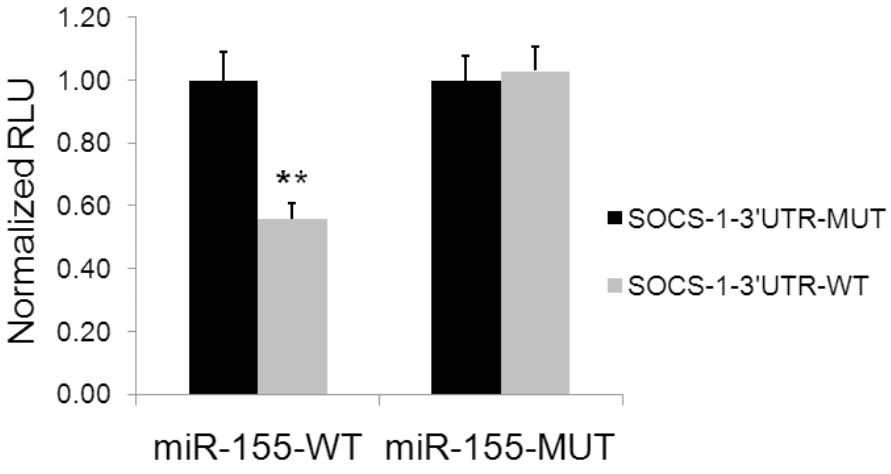
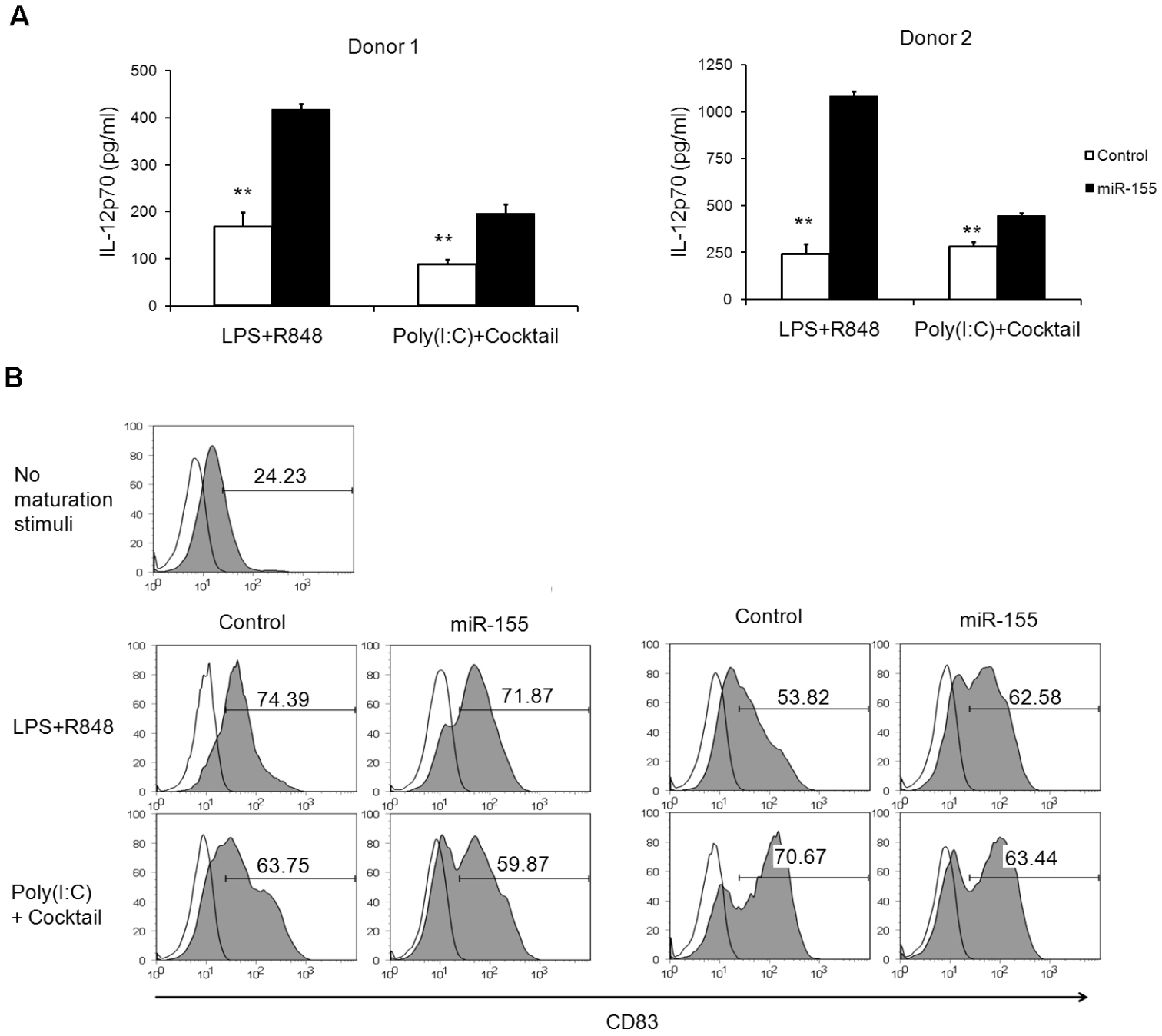


Figure S4


A
Donor 1
IL-12p70 (pg/ml)
500
400
300
200
100
0
**
**
LPS+R848
Poly(I:C)+Cocktail
Donor 2
1250
1000
750
500
250
0
Control
miR-155
B
No maturation stimuli
24.23
Control
miR-155
LPS+R848
74.39
71.87
53.82
62.58
Poly(I:C) + Cocktail
63.75
59.87
70.67
63.44
CD83