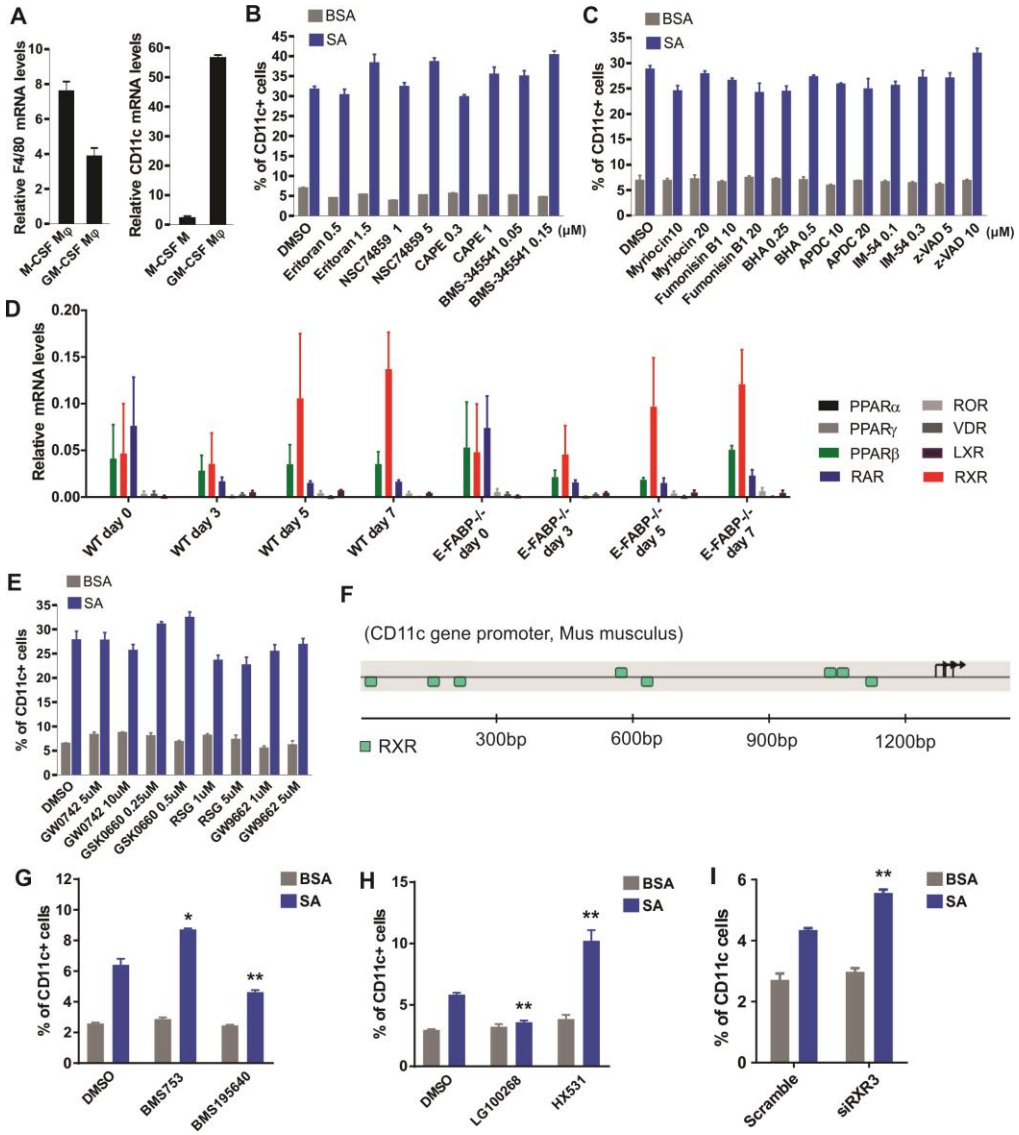
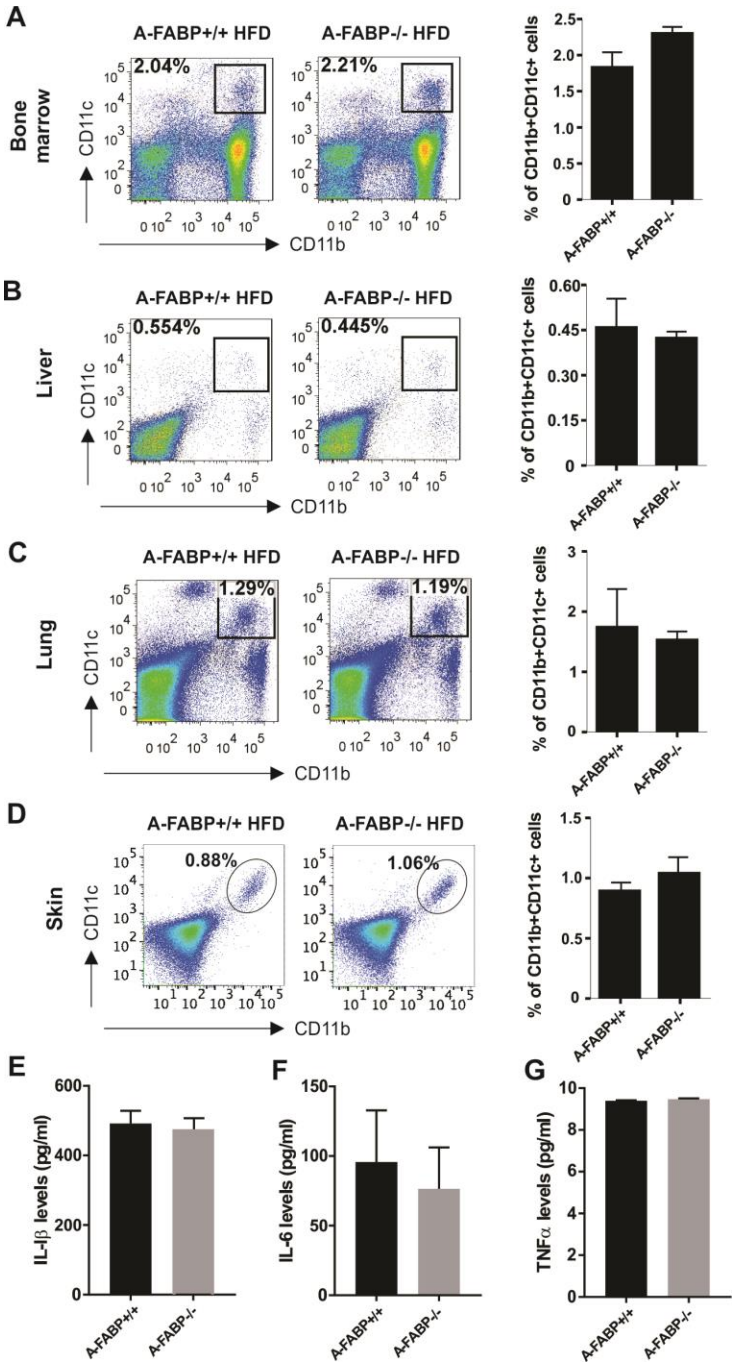
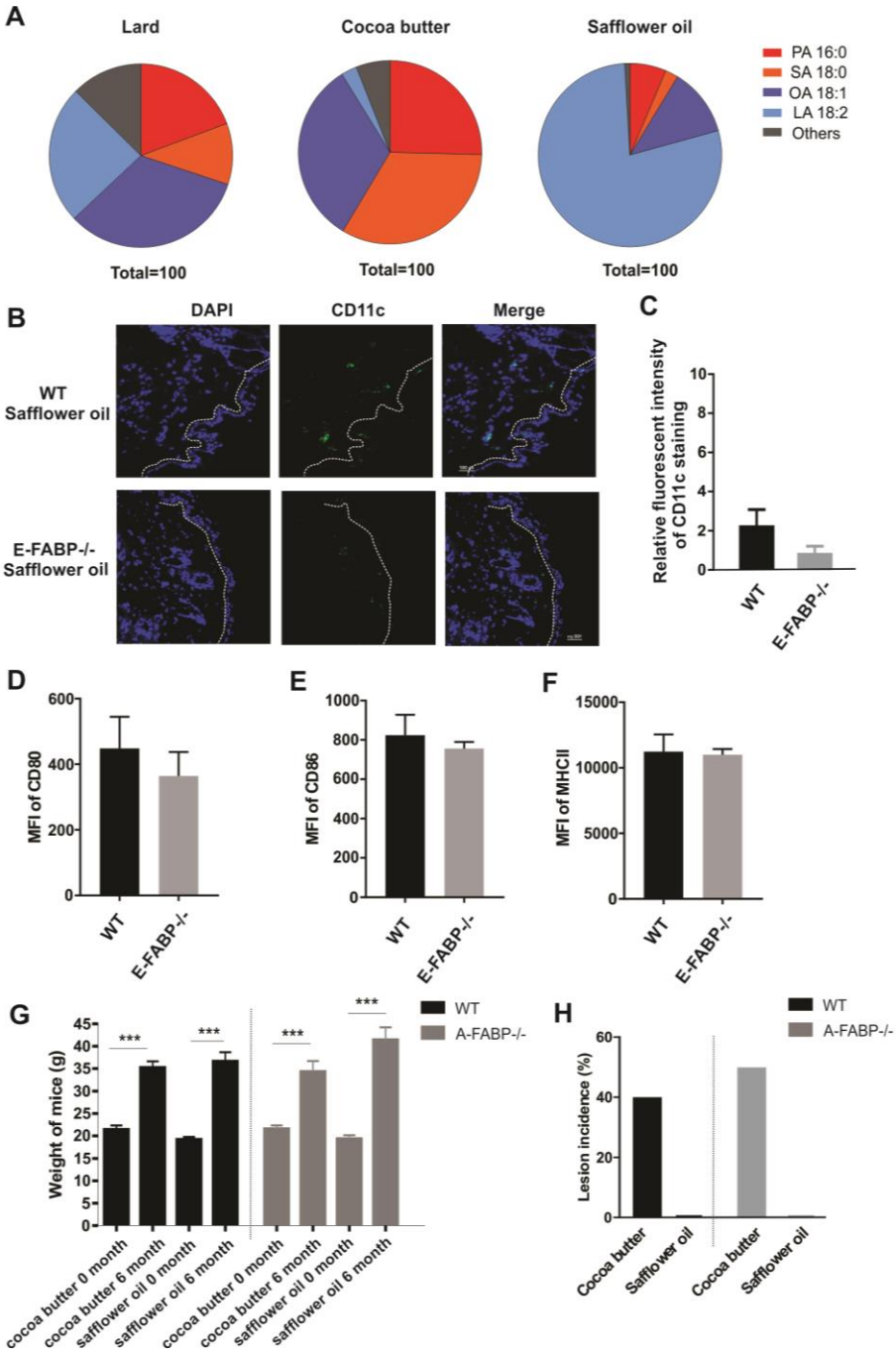


Supplemental Figure 1 Evaluation of expression and functional role of nuclear receptors in SA-induced CD11c expression in macrophages. **(A)** Comparison of expression of F4/80 and CD11c between M-CSF- and GM-CSF-induced bone marrow macrophages by realtime PCR. **(B-C)** Flow cytometric analyses of SA-induced CD11c expression on immortalized macrophages treated with indicated concentrations of various inhibitors targeting SA/TLR/NKκB pathways (**B**) or SA/ceramide/cell stress pathways (**C**). **(D)** Realtime PCR analysis of common nuclear receptor expression in bone marrow-derived macrophages differentiated by M-CSF at the indicated time points. **(E)** Flow cytometric analyses of SA-induced CD11c expression in immortalized macrophages treated with indicated concentrations of agonists and antagonists of PPAR families. **(F)** Analysis of RXR binding sites on the CD11c promoter region using Matinspector. **(G)** Flow cytometric analysis of CD11c+ cell percentage in BSA- or SA-treated primary BMMs in the presence of RAR agonist (BMS753) or antagonist (BMS195640) for 48h. **(H)** Flow cytometric analysis of CD11c+ cell percentage in BSA- or SA-treated primary BMMs in the presence of RXR agonist (LG100268) or antagonist (HX531) for 48h. **(I)** Primary BMMs transfected with RXR siRNA3 or scramble controls were stimulated with BSA or SA (100μM) for 24h. CD11c+ cell percentage was analyzed by flow cytometry (*, $p<0.05$; ** $p<0.01$ as compared to the DMSO control).



Supplemental Figure 2 A-FABP deficiency has no impact on CD11c+ macrophage differentiation in obese mice WT and A-FABP-/- mice were fed on HFD (60% fat) for 20 weeks. Different tissues or organs were collected, respectively, from the obese WT and A-FABP-/- mice (n=3) for analysis of the presence of CD11b+CD11c+ macrophages. **(A-D)** Analysis of CD11b+CD11c+ macrophages in bone marrow (**A**), liver (**B**), lung (**C**) and skin (**D**) by flow cytometric surface staining. Average percentage of CD11c+ cells is shown in the right panel of each figure. **(E-G)** Measurement of cytokine levels of IL-6, IL-1β and TNFα in the serum collected from obese WT and A-FABP-/- mice by ELISA. Data shown as mean±SEM are representative of at least two independent experiments.



Supplemental Figure 3 A-FABP is not a major player in the cocoa butter diet-induced skin lesions **(A)** Fatty acid compositions in different HFDs. **(B-C)** Confocal analysis of CD11c macrophages (green color) accumulation in the skin tissue of WT and E-FABP-/- mice fed with safflower oil for 9 months. Relative CD11c fluorescent intensity is shown in panel C. **(D-F)** Flow cytometric analyses of CD80 (**D**), CD86 (**E**) and MHCII (**F**) expression on CD11c+ macrophages in the skin of WT and E-FABP-/- mice fed with the safflower oil diet for 9 months. **(G)** Weight of WT mice and A-FABP-/- mice before and after cocoa butter diet (45% fat) (n=15/WT mice, n=14/A-FABP-/- mice) and safflower diet (45% fat) (n=9/WT mice, n=12/A-FABP-/- mice) for 6 months. **(H)** The incidence of skin lesions in WT and A-FABP-/- mice fed with cocoa butter diet or safflower oil diet for 9 months. Data are shown as mean ± SEM (***p<0.001).

Supplemental Table 1 Sequences of siRNAs, PCR primers used in experiments

	Sequences of siRNAs, PCR primers and miRs used in experiments		
	Name		**Oligo sequences (5' to 3')**
siRNA	*RXRa* siRNA(Duplex sequences) and scramble	siRNA1	UGGAGUGAUAUCUCAGGGCAUCUUUGG
		siRNA2	UCAGGUCUUUGCGUACUGUCCUCUUGA
		siRNA3	GUGUUUGCAGUACGCUUCUAGUGACGC
		scramble	GAUUCUCCGAACGUGUCACGUTT
qPCR	*A-FABP*	forward	TTTCCTTCAAACTGGGCGTG
		reverse	CATTCCACCACCAGCTTGTC
	E-FABP	forward	AACCGAGAGCACAGTGAAG
		reverse	ACACTCCACGATCATCTTCC
	CD11b	forward	ATCAGGGCGCTGTCTACATT
		reverse	GGCTCTGAGCAGCAGAAGAT
	CD11c	forward	GAGGACATGAGGGACGCTTA
		reverse	GAACAAAGAGATGCCCCAAA
	F4/80	forward	*CTGAGGATGAATTCCCGTGT*
		reverse	GTCTCGGATGCTTCCACAAT
	IL-6	forward	ACCTGTCTATACCACTTC
		reverse	GCATCATCGTTGTTCATA
	IL1β	forward	GAAATGCCACCTTTTGACAGTG
		reverse	TGGATGCTCTCATCAGGACAG
	TNFα	forward	GAACTGGCAGAAGAGGCACT
		reverse	AGGGTCTGGGCCATAGAACT
	IL-10	forward	CAGCCGGGAAGACAATAACT
		reverse	TCATTTCCGATAAGGCTTGG
	IL-12	forward	CCTCAGTTTGGCCAGGGTC
		reverse	CAGGTTTCGGGACTGGCTAAG
	IL-18	forward	*GCCTCAAACCTTCCAAATCA*
		reverse	*GTGAAGTCGGCCAAAGTTGT*
	IFN-α	forward	ACTGGCCAACCTGCTCTCTA
		reverse	GATGGCTTGAGCCTTCTTGA
	IFN-β	forward	CAGCTCCAAGAAAGGACGAAC
		reverse	GGCAGTGTAACTCTTCTGCAT
	FATP1	forward	GCTTCAACAGCCGTATCCTC
		reverse	TCGTCCATCACTAGCACGTC
	FATP2	forward	TCAAAGTCCCCAAAGGTGAG
		reverse	CCACCGGAAAGTATCTCCAA
	FATP3	forward	AGTGGCTGAGGTCTTGGAGA
		reverse	TTGGCCATCCTAACCTTCTG
	FATP4	forward	CATCTGGACCCTCTTCTGGA
		reverse	GGGGAGGCAGTCATAGACAA
	ACSL1	forward	CCGGATGTTCGACAGAATTT
		reverse	GTGATCATCAGCCGGACTTT
	iNOS	forward	CACCAACAATGGCAACATCAG
		reverse	GTCGATGCACAACTGGGTG
	HPRT1	forward	AGCCTAAGATGAGCGCAAGT
		reverse	TTACTAGGCAGATGGCCACA
	RXRa	Qiagen RT2 Primer Assay	
	FABP1, 2, 3, 6, 7, 9, 12	All from Qiagen RT2 Primer Assay	
	*PPAR*α	Qiagen RT2 Primer Assay	
	*PPAR*β	Qiagen RT2 Primer Assay	
	*PPAR*δ	Qiagen RT2 Primer Assay	
	RAR	Qiagen RT2 Primer Assay	
	VDR	Qiagen RT2 Primer Assay	
	LXR	Qiagen RT2 Primer Assay	
	ROR	Qiagen RT2 Primer Assay	
	CD36	Qiagen RT2 Primer Assay	