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Supplementary Data

1α,25-Dihydroxyvitamin D_3 and Resolvin D1 Retune the Balance between Amyloid-β Phagocytosis and Inflammation in Alzheimer's Disease Patients

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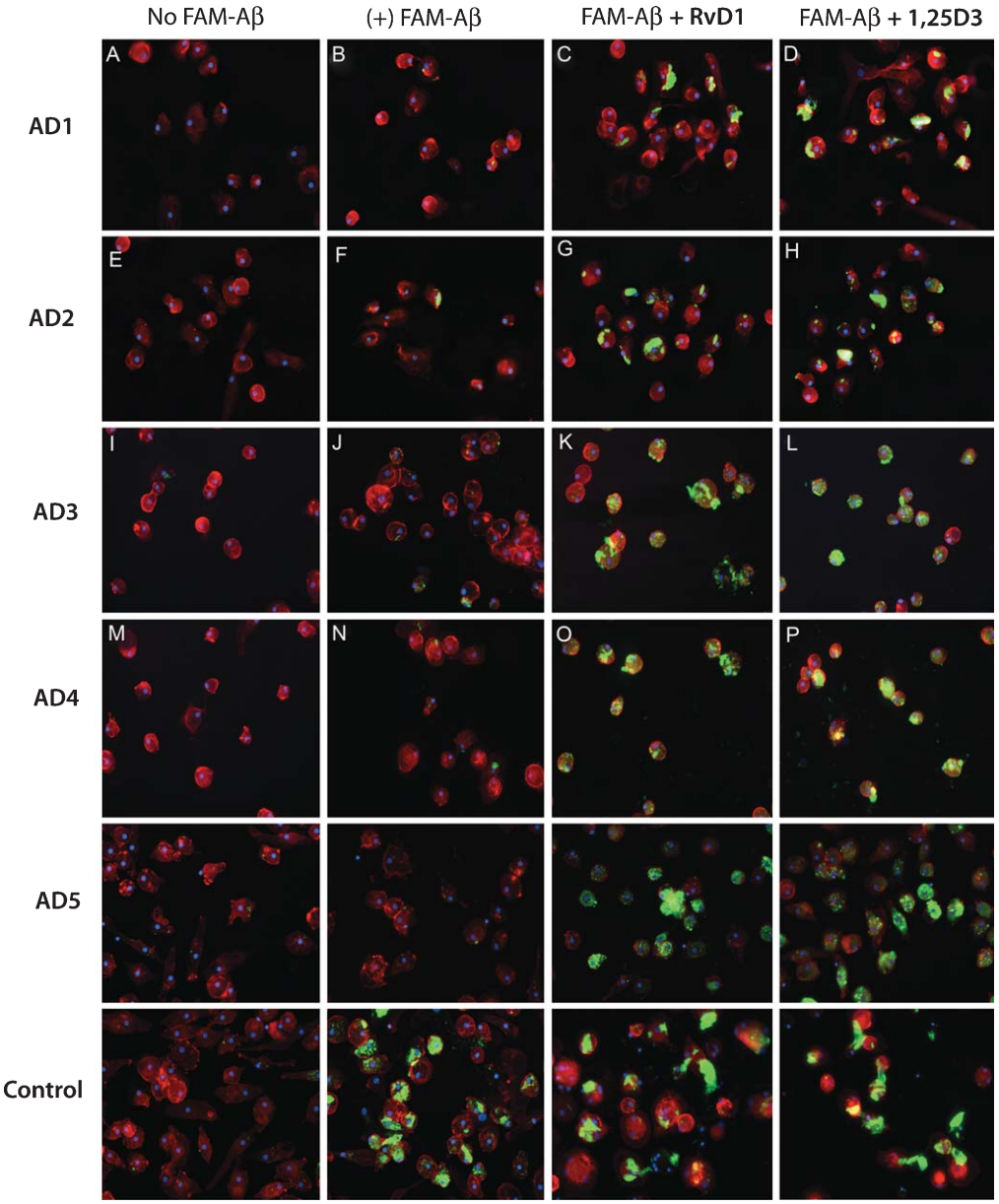
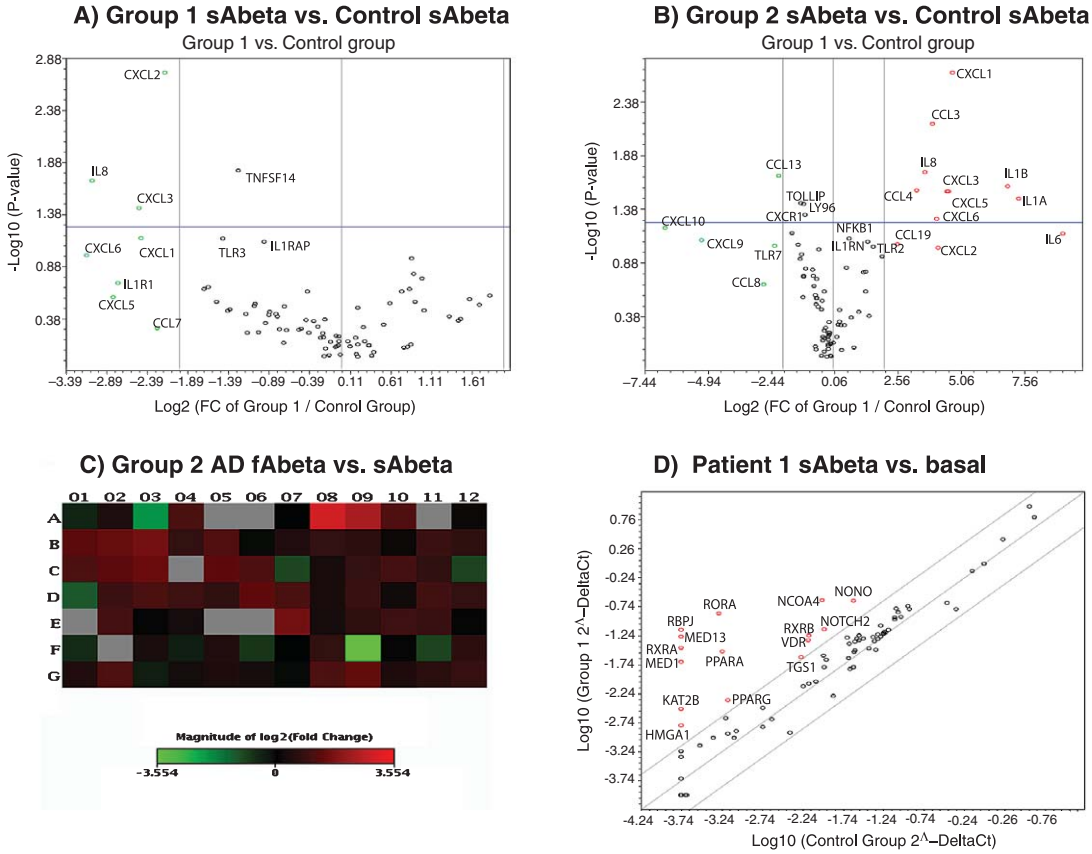


Supplementary Figure 1. 1,25D3 and RvD1 recover Aβ phagocytosis by macrophages of AD patients. The pictures obtained following the treatment of AD macrophages from the five AD patients and a control subject with FAM-Aβ and the effect of 1,25D3 and RvD1 on binding and uptake of FAM-Aβ (green). The cytoskeleton in each figure panel is stained red and the nucleus blue.



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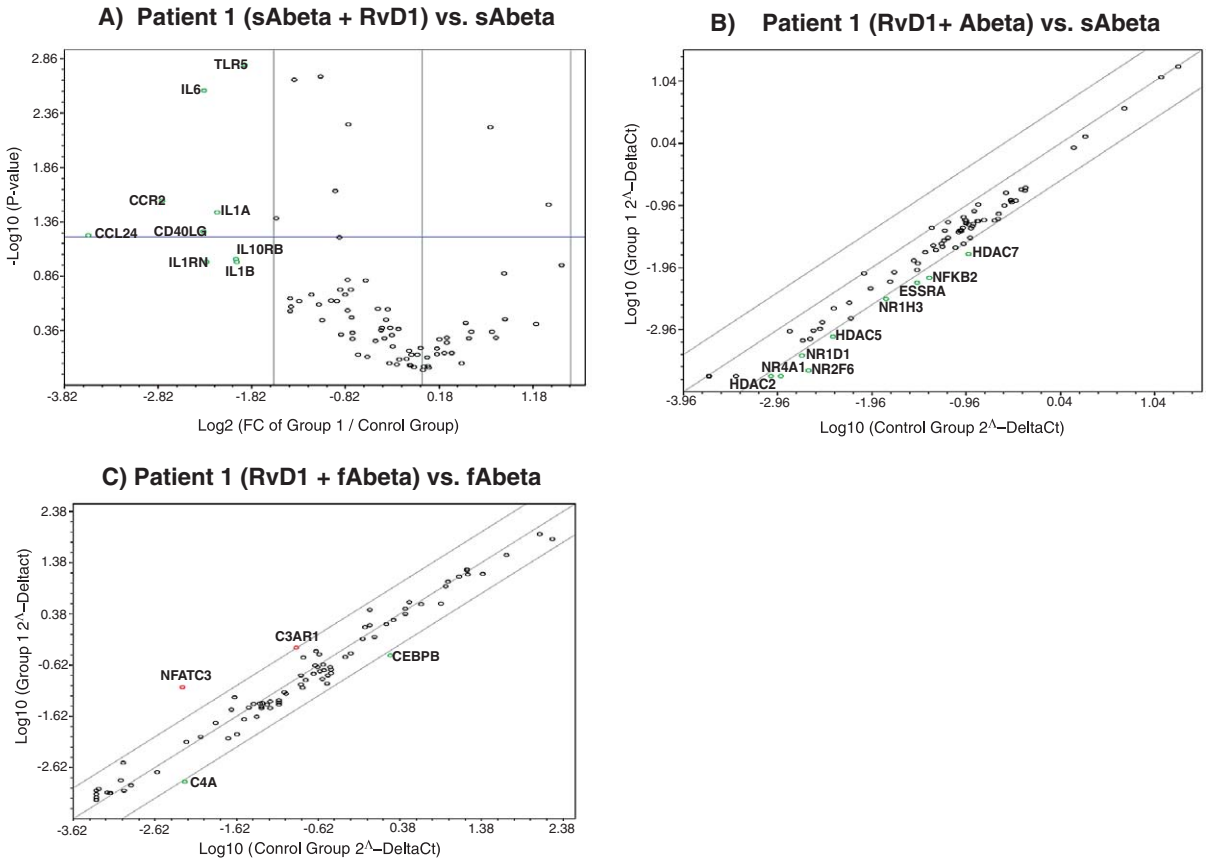
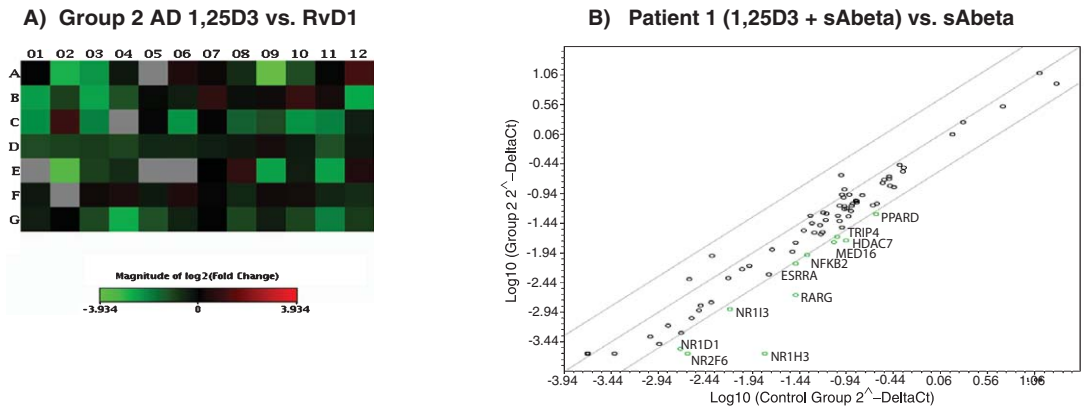
A	BCL6	C3	C3AR1	C4A	CCL11	CCL13	CCL16	CCL17	CCL19	CCL2	CCL21	CCL22
B	CCL23	CCL24	CCL3	CCL4	CCL5	CCL7	CCL8	CCR1	CCR2	CCR3	CCR4	CCR7
C	CD40	CD40LG	CEBPB	CRP	CSF1	CXCL1	CXCL10	CXCL2	CXCL3	CXCL5	CXCL6	CXCL9
D	CXCR4	FASLG	FLT3LG	FOS	HDAC4	IFNG	IL10	IL10RB	IL18	IL18RAP	IL1A	IL1B
E	IL1F10	IL1R1	IL1RAP	IL1RN	IL22	IL22RA2	IL23A	IL23R	IL6	IL6R	IL8	CXCR1
F	CXCR2	IL9	ITGB2	KNG1	LTA	LTB	LY96	MYD88	NFATC3	NFKB1	NOS2	NR3C1
G	RIPK2	TIRAP	TLR1	TLR2	TLR3	TLR4	TLR5	TLR6	TLR7	TNF	TNFSF14	TOLLIP

Supplementary Figure 2. Effects of exogenous sAβ and fAβ on the expression of inflammatory and autoimmune genes in AD patients and controls. A) A volcano plot demonstrates the effects of sAβ in the group 1 patient 1 PBMCs ($n = 3$) compared to control PBMCs ($n = 3$). B) A volcano plot demonstrates how group 2 AD PBMCs ($n = 3$) treated with sAβ compared to control PBMCs treated with sAβ ($n = 3$). C) Scatter plot and heat map of the greater pro-inflammatory effect of 2 μg/ml fAβ ($n = 3$) in group 1 AD PBMCs when compared to 2 μg/ml sAβ ($n = 3$). D) Effect of sAβ on the baseline expression of nuclear receptors and transcriptional co-regulators in group 1 AD PBMCs ($n = 2$).



Supplementary Figure 3. Effects of RvD1 on transcription in group 2 AD, patient 1. A) A volcano plot demonstrating that RvD1 significantly down regulated the expression of a number of different cytokines up regulated by sAβ in patient 1 ($n = 3$), a group 2 AD patient (Table 1). B) Scatter plot demonstrating that 26 nM RvD1 does not down regulate the transcription of nuclear receptors and co-regulators stimulated by exogenous sAβ. C) A volcano plot demonstrating the impact of co-incubating PBMCs overnight with fAβ. on the effect of RvD1 in patient 1 PBMCs.



Layout	1	2	3	4	5	6	7	8	9	10	11	12
A	BCL6	C3	C3AR1	C4A	CCL11	CCL13	CCL16	CCL17	CCL19	CCL2	CCL21	CCL22
B	CCL23	CCL24	CCL3	CCL4	CCL5	CCL7	CCL8	CCR1	CCR2	CCR3	CCR4	CCR7
C	CD40	CD40LG	CEBPB	CRP	CSF1	CXCL1	CXCL10	CXCL2	CXCL3	CXCL5	CXCL6	CXCL9
D	CXCR4	FASLG	FLT3LG	FOS	HDAC4	IFNG	IL10	IL10RB	IL18	IL18RAP	IL1A	IL1B
E	IL1F10	IL1R1	IL1RAP	IL1RN	IL22	IL22RA2	IL23A	IL23R	IL6	IL6R	IL8	CXCR1
F	CXCR2	IL9	ITGB2	KNG1	LTA	LTB	LY96	MYD88	NFATC3	NFKB1	NOS2	NR3C1
G	RIPK2	TIRAP	TLR1	TLR2	TLR3	TLR4	TLR5	TLR6	TLR7	TNF	TNFSF14	TOLLIP

Supplementary Figure 4. Effects of 1,25D3 on transcription in group 2 AD, patient 1. A) A heat map demonstrating that 1,25D3 has a more potent down regulatory effect when compared to RvD1 in PBMCs co-incubated with sAβ patient 1 ($n = 2$ for each group). The array layout for the heat map is provided under the figure panels. B) Scatter plot that demonstrates the effect 10 nM 1,25D3 has on the transcription of nuclear receptors and co-regulators when co-incubated with sAβ.