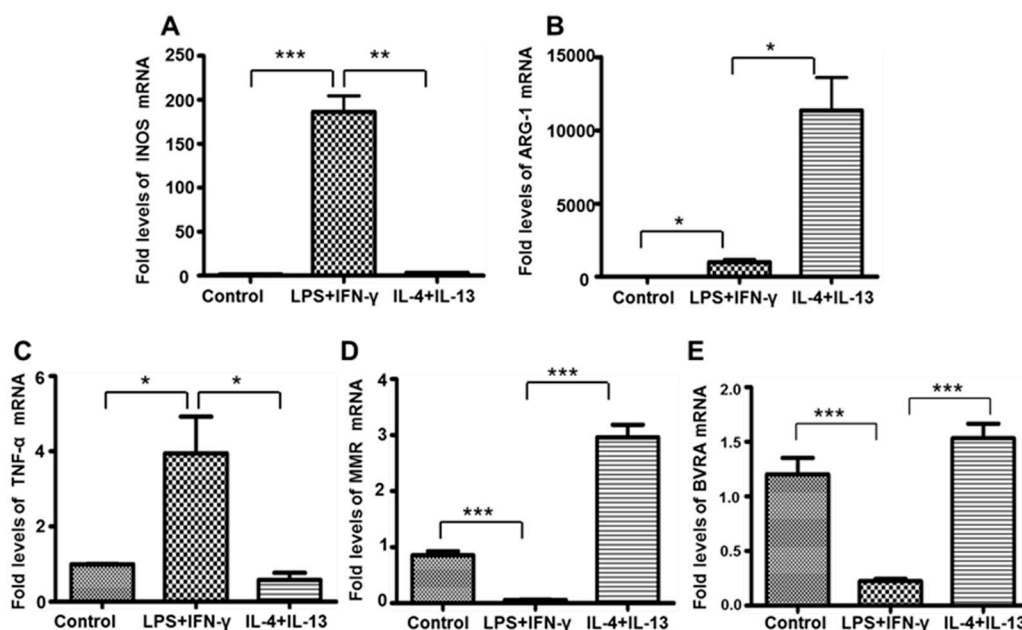


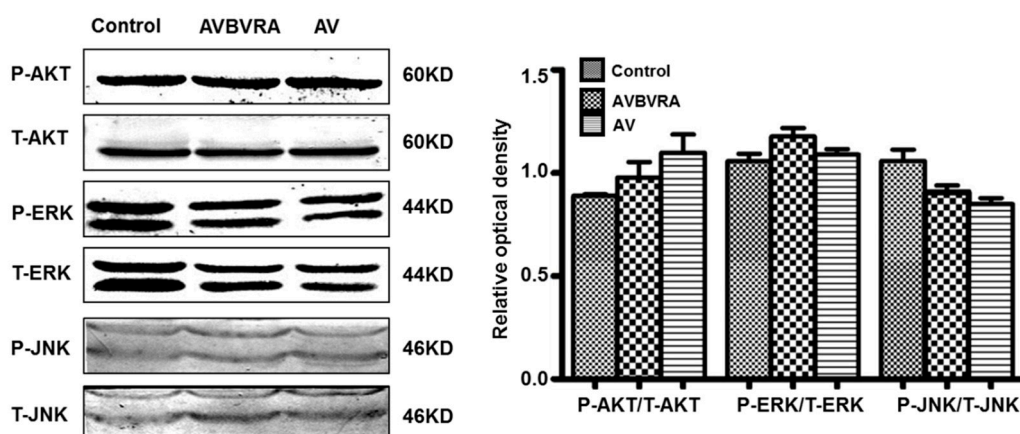
## Supplementary Information

Macrophage polarization was induced by LPS and IFN- $\gamma$ , IL-4 and IL-13, and BVRA expression increased in M2 macrophage, compared to M1 macrophage.



**Figure S1.** Macrophage polarization was induced by LPS and IFN- $\gamma$ , IL-4 and IL-13. INOS (A); ARG-1 (B); TNF- $\alpha$  (C); MMR (D) and BVRA (E) mRNA expression was detected by qRT-PCR. Control: Macrophages with no treatment; LPS+IFN- $\gamma$ : Macrophages with LPS 100 ng/mL and IFN- $\gamma$  100 ng/mL for 24 h; IL-4 + IL-13: Macrophages with IL-4 10 ng/mL and IL-13 10 ng/mL for 24 h.  $n = 4$ , \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

There was no difference between the AVBVRA group and control group in signal pathways' molecules such as P-AKT, T-AKT, P-ERK, T-ERK, P-JNK and T-JNK.



**Figure S2.** P-AKT, T-AKT, P-ERK, T-ERK, P-JNK and T-JNK protein were detected by Western blotting in over-expressed BVRA macrophages. Control: Macrophages with no virus; AVBVRA: Macrophages transfected with AV-BVRA; AV: Macrophages transfected with AV-negative control.