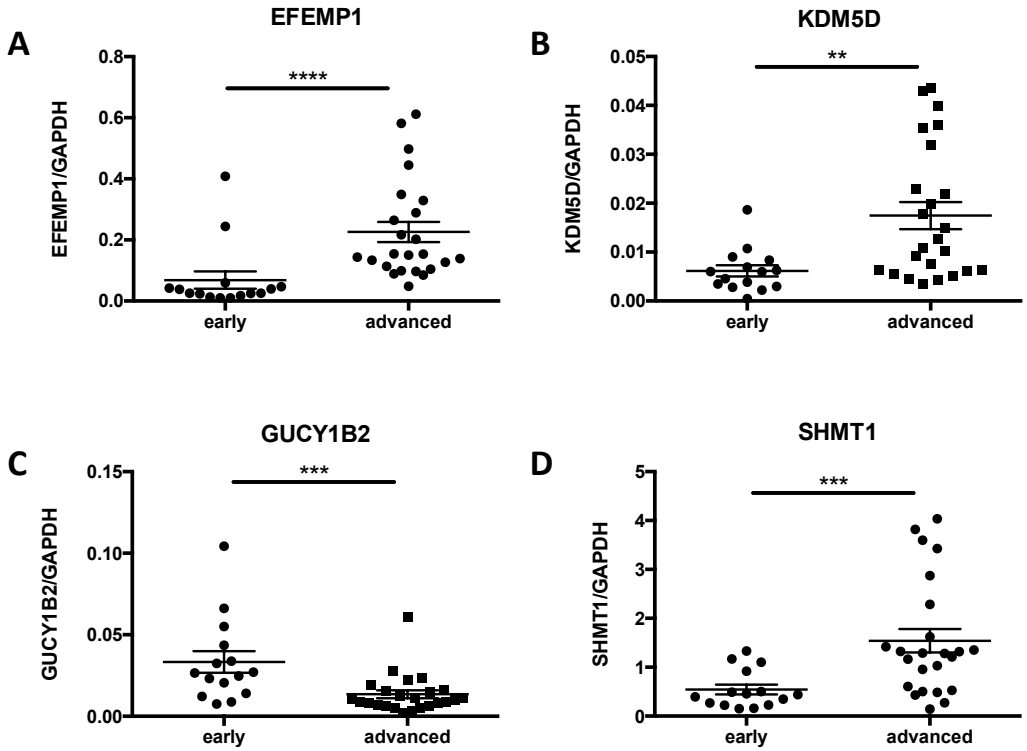


Figure S1. Expression of EFEMP1, KDM5D, GUCY1B2 and SHMT1 in the *A. iliaca communis* of early versus advanced CVD patients. Dot plots representing the mean±SEM of **A.** EFEMP1, **B.** KDM5D, **C.** GUCY1B2, and **D.** SHMT1 expression(Western blot) normalized to GAPDH in the *A. iliaca communis* of control (n=15) and disease (n=24) patients, with **p<0.01, ***p<0.001, and ****p<0.0001.

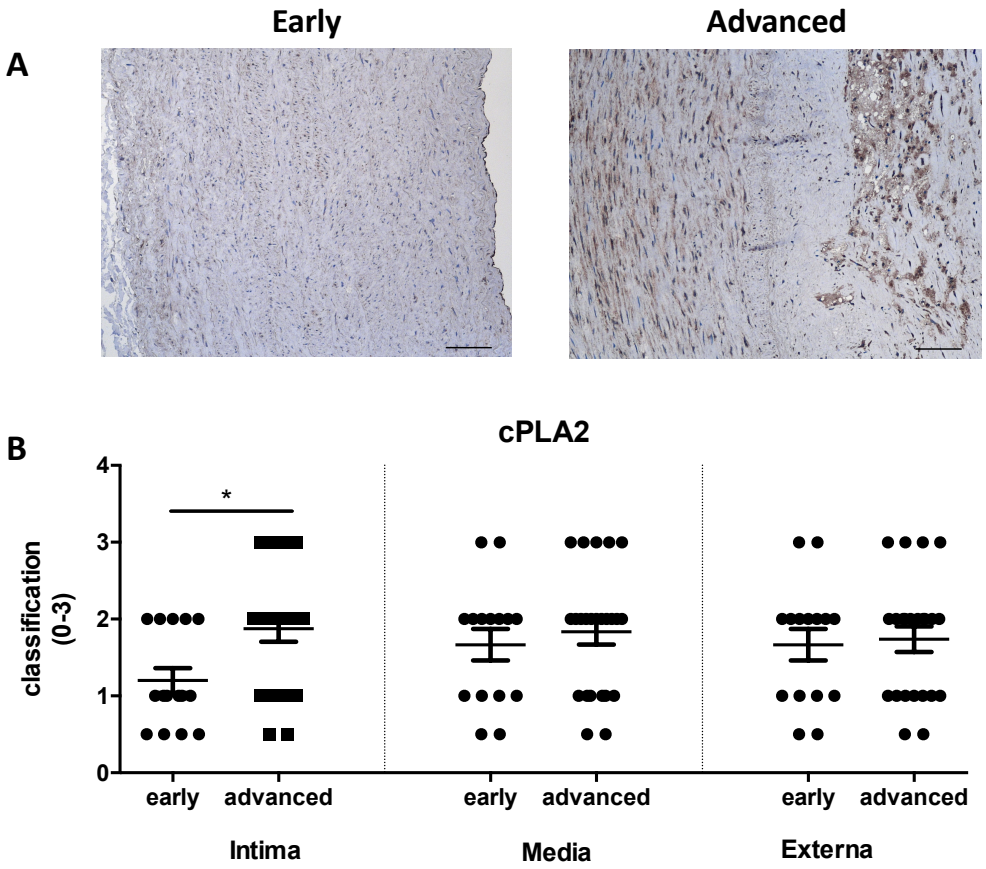


Figure S2. cPLA2 protein expression is increased in the intima of *A. iliaca communis* of disease versus control patients. A. Representative pictures of *A. iliaca communis* of a early (left) and adavnced (right) CVD patient at 100x magnifcation, scale bar 100 µm. **B.** Dot plots representing the mean±SEM of cPLA2 expression in the Tunica intima, media and externa of early (n=15) and advanced (n=24) CVD patients. Expression is depicted semiquantitatively with the following classification: 0.5 = very weak expression, 1 = weak expression, 2 = moderate expression, 3 = strong expression.

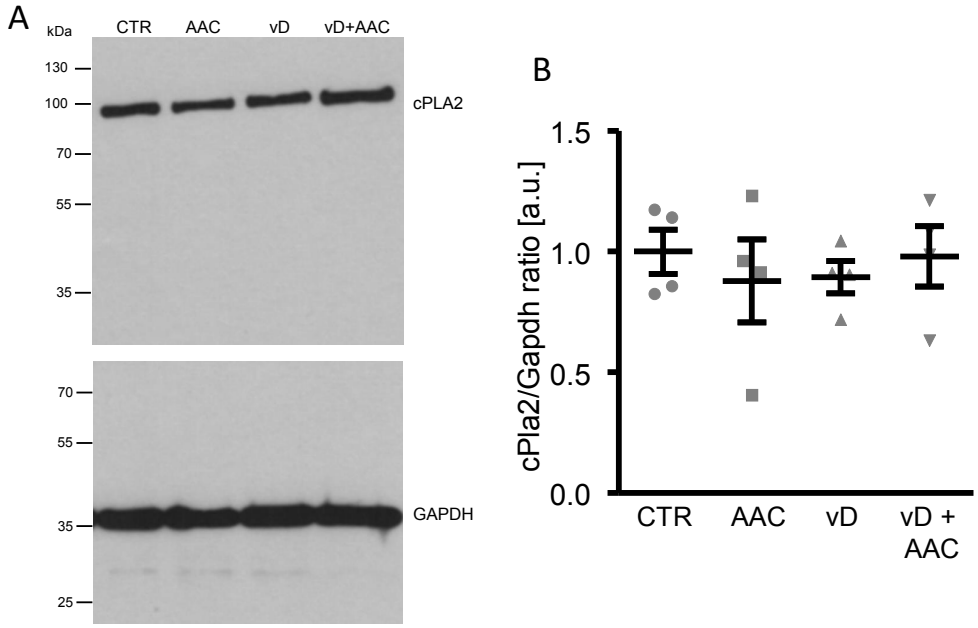


Figure S3. Influence of vitamin D on cPLA2 expression in aortic tissue *in vivo*. (A) Representative cPLA2 and GAPDH Western blots in aortic tissue of mice receiving vehicle (CTR) or high-dosed cholecalciferol (vD) without or with additional treatment with AACOCF3 (AAC). (B) Scatterdot plots and arithmetic means ± SEM of cPLA2 protein expression normalized to GAPDH (n=4 per group). One-way ANOVA test revealed no statistical significance.

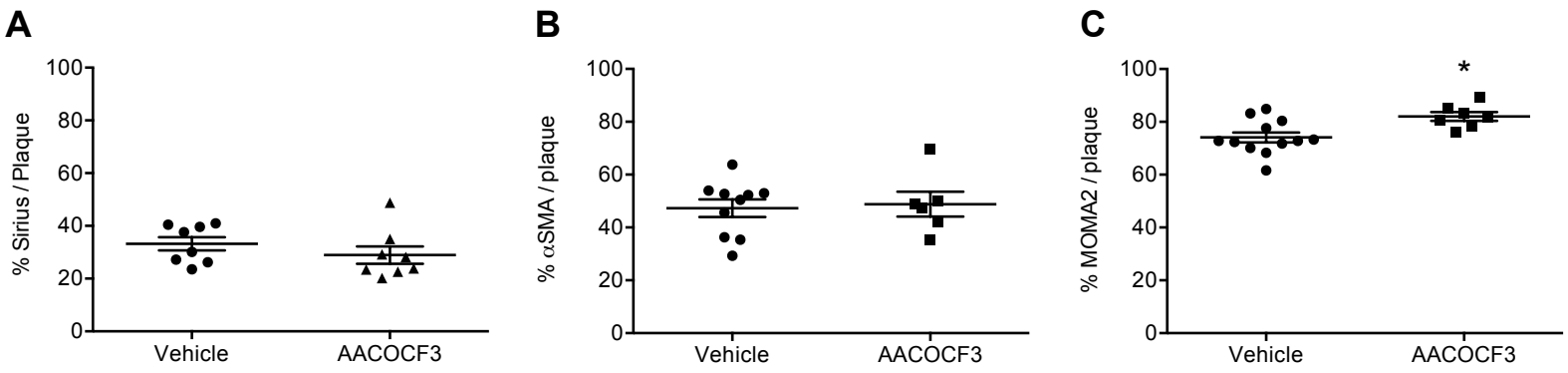


Figure S4. Representative pictures and scatterdot plots and arithmetic means ± SEM of quantification (%/plaque) of Sirius red staining (**A,** n=8-8), and αSMA (**B**, n=6-10) and of MOMA2 immunostaining (**C**, n=7-12) in aortic sinus cryosections of 6 weeks old *ApoE-/-* male mice fed a high cholesterol diet and simultaneously treated with AACOCF3 (AAC, 10 mg/kg) or vehicle (CTR) for 10 weeks. *($p<0.05$) statistically significant vs. control mice (unpaired two-tailed t-test).

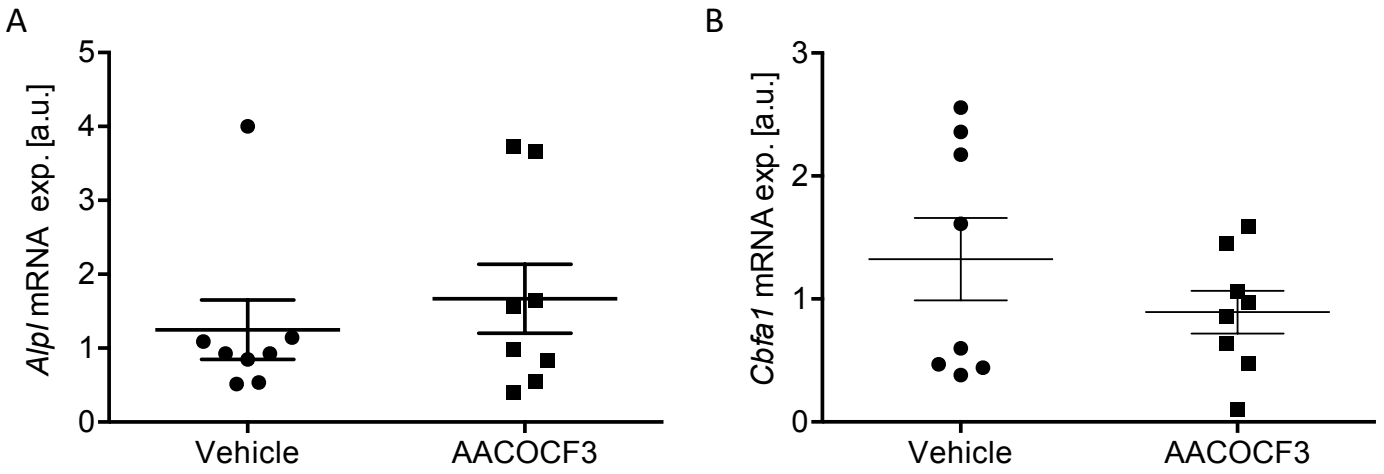


Figure S5. Scatterdot plots and arithmetic means ± SEM (n=8; arbitrary units, a.u.) of *Alpl* (**A**), *Cbfa1* (**B**) relative mRNA expression in aortic tissue of 6 weeks old *ApoE-/-* male mice fed a high cholesterol diet and simultaneously treated with AACOCF3 (AAC, 10 mg/kg) or vehicle (CTR) for 10 weeks. Unpaired two-tailed t-test revealed no significant difference between Vehicle and AACOCF3 groups.