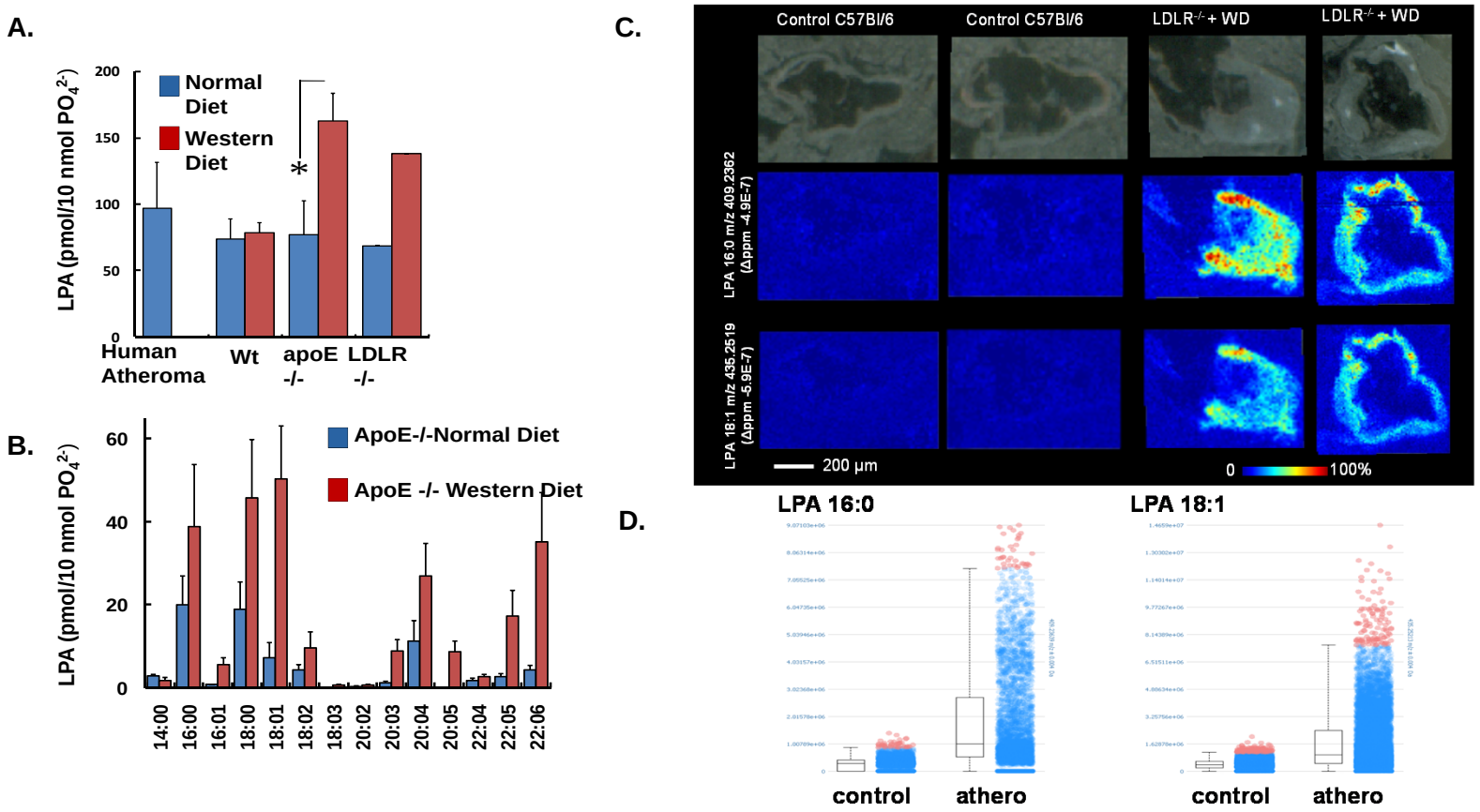

Supplemental Figure S1: ***Increased LPA content in experimental atherosclerosis.*** (A) Total LPA in mice of indicated genotype on standard chow (normal diet) or Western diet. Wt = contorl C57Bl/6 mice. (B) Individual LPA species measured by measured using high performance liquid chromatography electrospray ionization tandem mass spectrometry using AB Sciex 4000 Q-Trap linear ion trap triple quadrupole mass spectrometer. (C) MALDI imaging mass spectromtery of LPA 16:0 (top) and 18:1 (bottom) in sections from aortic root of control C57Bl/6 mice and Ldlr-/- mice on Western diet (D) quantification of MALDI imaging mass spectromtery. Imaging experiments were performed as previously described [1]. Briefly, 1,5-diaminonaphthalene in 90% acetonitrile was sprayed onto tissue using a M3 TM-Sprayer (HTX Technologies) with 10 passes at 100 microliters a minute, velocity of 1200 mm/s nitrogen gas at 10 psi, sprayhead heating at 60°C. Fourier Transform Ion Cyclotron Resonance (FT-ICR) mass spectrometer equipped with a matrix-assisted laser desorption/ ionization MALDI source (7 Tesla Solarix Legacy, Bruker, Bremen, Germany). Data was collected in negative ion mode using 1 megaword datapoint collection with broadband detection range m/z 200-1600. The transient length was 0.9787 seconds. Number of scans per spectra was set to one with 20 laser shots per spectra and no rastering. Laser was stepped across tissue at a 25 µm step size. Calibration of the instrument in negative and positive ion mode was performed using quadratic fit with ion from sodium trifluoroacetic acid in 50% acetonitrile from *m/z* --. Lipid signal was optimized using LPA standards. Data was processed with SCiLS v2016 software. Reference 1. Angel, P. M.; Spraggins, J. M.; Scott Baldwin, H.; Caprioli, R., Enhanced Sensitivity for High Spatial Resolution Lipid Analysis by Negative Ion Mode Matrix Assisted Laser Desorption Ionization Imaging Mass Spectrometry. *Analytical Chemistry* **2012,** 84, (3), 1557-1564.PMID:22243218.