COX-2 deletion increases plaque macrophage but not lipid and smooth muscle content. Atherosclerotic lesions in the brachiocephalic artery of fat-fed apoE−/−/COX-2+/+ and apoE−/−/COX-2−/− mice were examined for estimated lipid content, smooth muscle/myofibroblast content and macrophage content respectively by measuring intra-plaque voids in elastic Van Gieson (EVG) stained histological sections (a), or by immunohistochemistry for α-smooth muscle actin (αSMA; b) and Mac2 (c). Intra-plaque voids reminiscent of extracellular cholesterol crystals and Mac2 immunoreactivity were abundant in the intimal layer of all student vessels but rarer in the medial and adventitial layers, whereas αSMA was present in both the intimal and medial layers. The relative abundance of lipid-like voids and αSMA immunoreactivity was not altered by COX-2 deletion. By contrast, vessels from apoE−/− mice lacking COX-2 exhibited significantly more Mac2 immunoreactivity than vessels from control mice. *; p<0.05 vs apoE−/−/COX-2+/+ by unpaired t-test; n=8-10.