Supplementary Table 1. Stary classification of atherosclerotic lesion stages

Stary Stages	Histological Manifestation
Type I	Accumulations of smooth muscle cells in the absence of macrophage foam cells
Type II	Lesions containing foam cell layers without a necrotic core or fibrous cap
Type III	Lesions with extracellular lipid pools based on type II lesions
Type IV	Lesions containing well-formed extracellular lipid core
Type V	Lesions with fibromuscular layers overlaying lipid core (fibrous cap)
Type VI	Lesions with surface defect, hematoma or thrombosis (ruptured thin fibrous cap)
Type VII	Lesions with well-formed calcification nodule
Type VIII	Lesions containing collagen-rich plague with large contents of calcification

Supplementary Table 2. Comparison of simulated parameters in the 3 equivalent circuit models for endoluminal EIS data in Figure 1d

Equivalent Circuit	Y_1/C_{DL1} (10^{-8}F)	a_1	R_{CT1} (Ω)	R_B (10^3Ω)	C_B (10^{-11}F)	Y_2/C_{DL2} (10^{-8}F)	a_2	R_{CT2} (Ohm) (10^{-4})	Goodness of Fit (10^{-4})
EC1	4.61	0.68	>1.0 x10^{38}*	6.72	5.70	6.16	0.85	1.74	6.5
EC2	4.78	0.68	N/A	6.67	5.74	2.37	N/A	9.94	6.8
EC3	0.614	N/A	N/A	9.33	6.17	0.222	N/A	6.34	220

*: Simulated value exceeded computational capacity of the simulation software, indicating a large charge transfer resistance of the counter electrode (R_{CT1}).
N/A : Not Applicable