

# **SUPPLEMENTAL MATERIAL**

**Table S1. Univariable and multivariable analyses which analyze one randomly selected plaque from each patient (sensitivity analysis).**

	Univariable		Multivariable	
	Odds ratio [95%CI]	P value	Odds ratio [95%CI]	P value
Baseline thin-cap area	1.498 [1.025, 2.189]	0.037	1.293 [0.798, 2.096]	0.296
TCFA (< 65µm)	3.333 [1.137, 9.776]	0.028	1.496 [0.340, 6.580]	0.594
Macrophage	1.883 [0.653, 5.428]	0.241		
Macrophage index (per 10 increase)	1.066 [1.031, 1.103]	< 0.001	1.049 [1.014, 1.085]	0.005
Microvessel	1.000 [0.366, 2.730]	1.000		
Layered plaque	5.667 [2.103, 15.270]	0.001	4.631 [1.442, 14.869]	0.010
Cholesterol crystal	0.440 [0.113, 1.709]	0.236		
Spotty calcium	1.000 [0.400, 2.501]	1.000		
Baseline lipid index (per 10 increase)	1.008 [1.001, 1.014]	0.015	1.003 [0.991, 1.014]	0.666
MLA	0.977 [0.673, 1.418]	0.903		

CI = confidence interval; FCT = fibrous-cap thickness; MLA = minimum lumen area; TCFA = thin-cap fibroatheroma.

**Table S2. Predictors for a favorable vascular response to statin therapy in statin naïve patients.**

	<b>Favorable response (n = 18)</b>	<b>Less favorable response (n = 36)</b>	<b>P value</b>
Intensity of Statin therapy			0.483
High-intensity, n (%)	1 (5.6)	4 (11.1)	
Moderate-intensity, n (%)	16 (88.9)	27 (75.0)	
Low-intensity, n (%)	1 (5.6)	5 (13.9)	
Thin-cap area (Baseline), mm <sup>2</sup>	7.308 (4.044 – 22.371)	1.664 (0.482 – 4.068)	< 0.001
Macrophage index (Baseline)	317.6 (105.9 – 416.0)	139.3 (5.0 – 255.2)	0.010
Layered plaque (Baseline), n (%)	9 (50.0)	11 (30.6)	0.163

Values are n (%), or median (interquartile range).

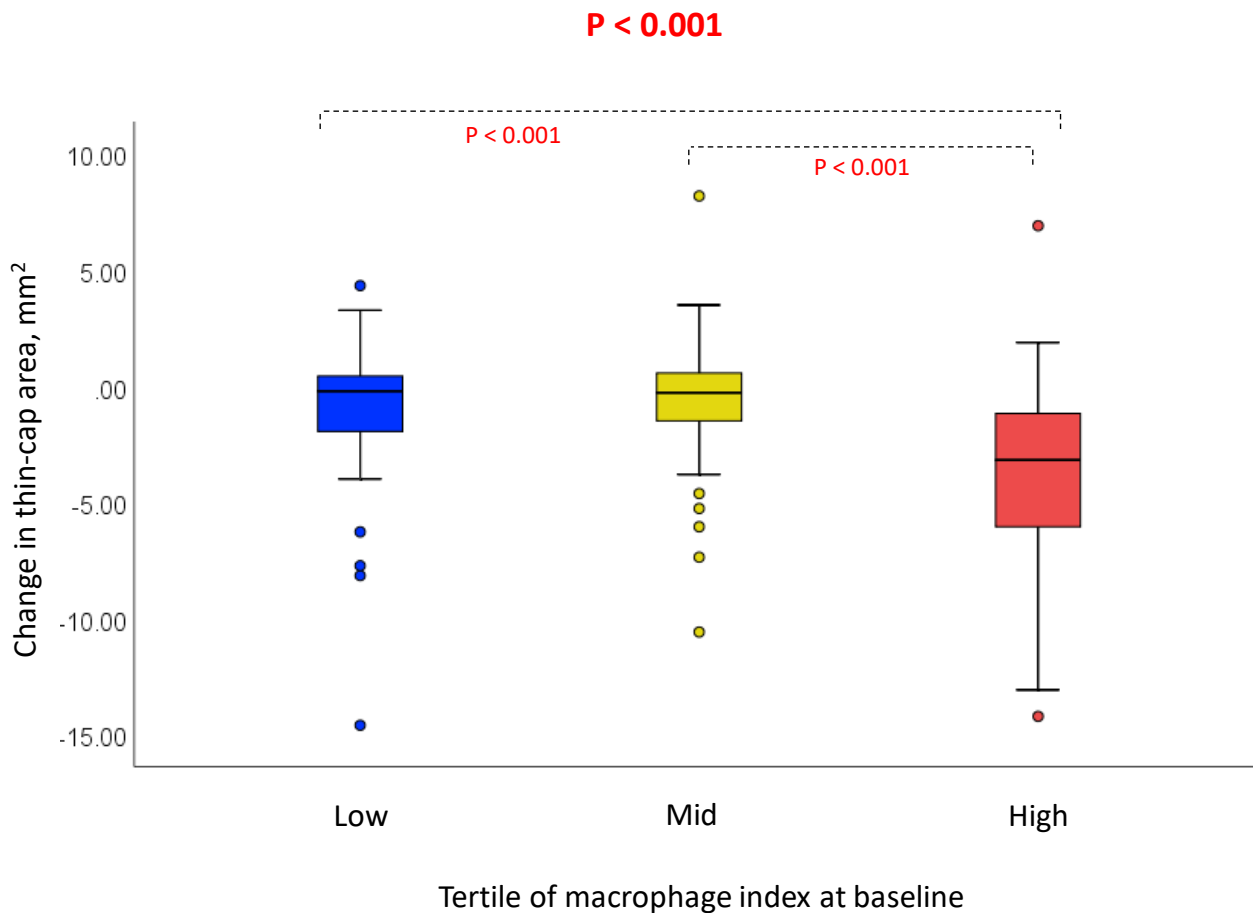
**Table S3. Univariable analysis of a favorable vascular response to statins in statin naïve patients.**

	<b>Univariable</b>	
	<b>Odds ratio [95%CI]</b>	<b>P value</b>
Baseline thin-cap area	1.417 [1.006, 1.883]	0.016
Macrophage index (per 10 increase)	1.052 [1.017, 1.087]	0.003
Layered plaque	2.273 [0.680, 7.592]	0.182

CI = confidence interval.

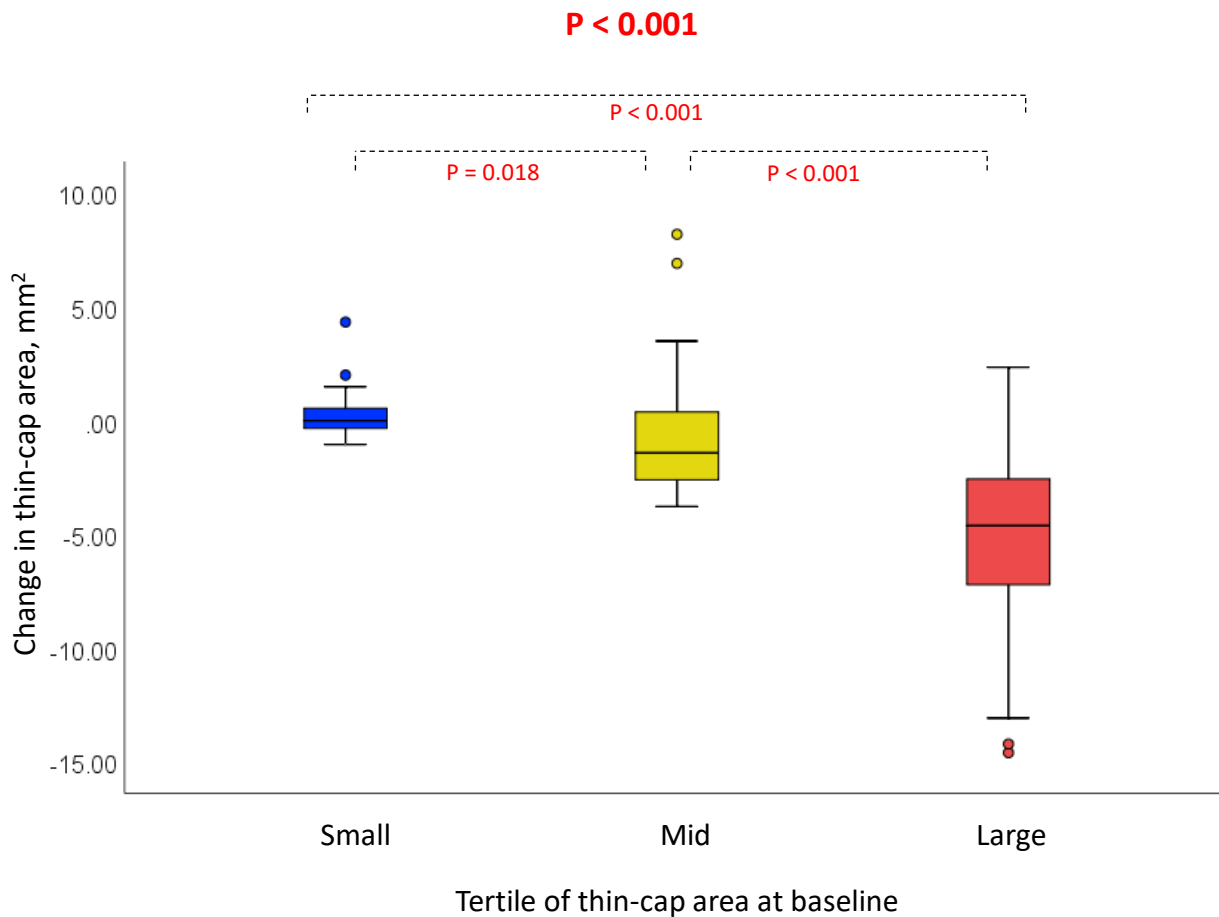
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**Figure S1. Degree of thin-cap area change among the three groups based on the macrophage index at baseline.**



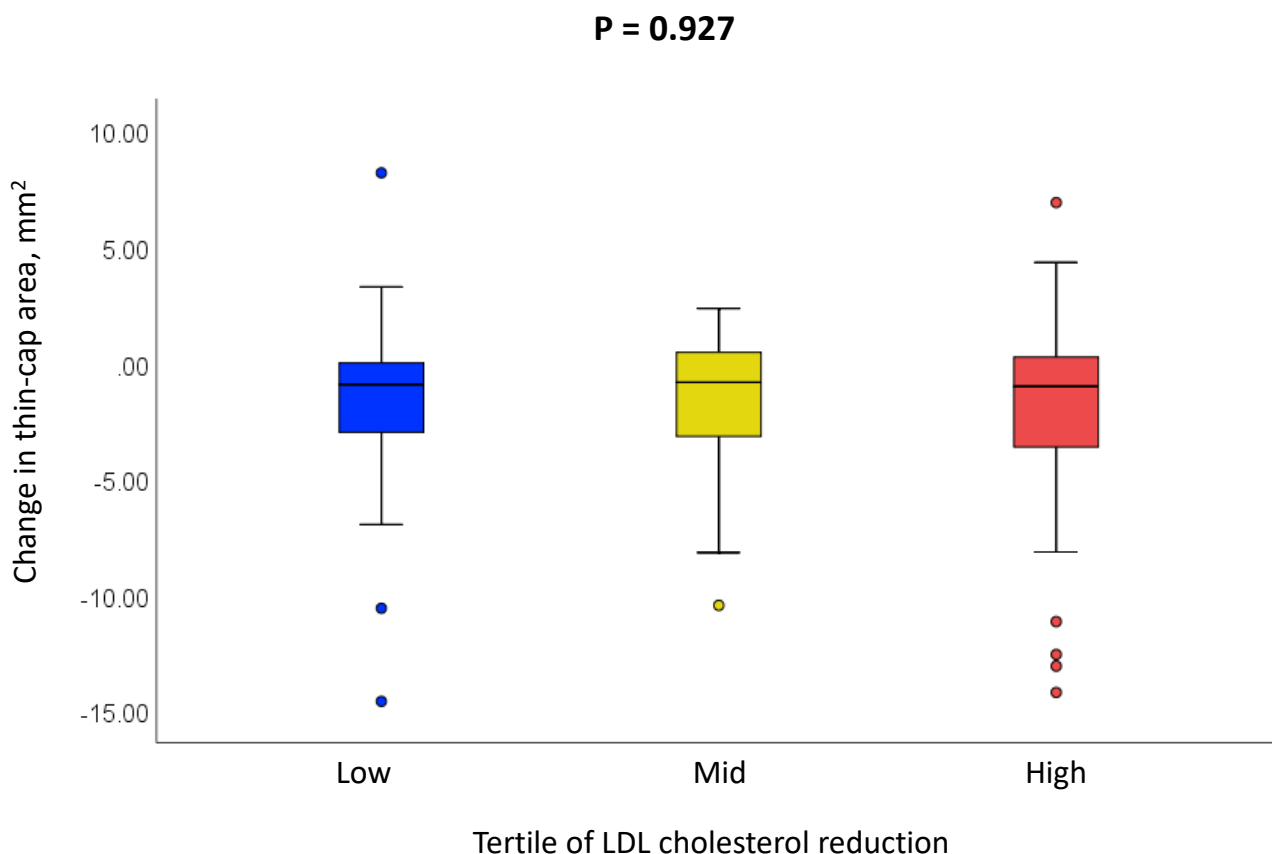
Non-culprit lipid plaques were divided into three groups based on the macrophage index at baseline (macrophage index at baseline: 0.0 [25<sup>th</sup>-75<sup>th</sup> percentile 0.0 to 35.0] in the low tertile, 136.5 [25<sup>th</sup>-75<sup>th</sup> percentile 85.8 to 169.0] in the mid tertile, 322.4 [25<sup>th</sup>-75<sup>th</sup> percentile 272.0 to 421.2] in the third tertile). The high tertile of macrophage index at baseline showed significantly greater reduction of thin-cap area than the low and mid tertiles (low tertile vs. mid tertile vs. high tertile: -0.220 [25<sup>th</sup>-75<sup>th</sup> percentile -1.961 to 0.553] vs. -0.287 [25<sup>th</sup>-75<sup>th</sup> percentile -1.530 to 0.580] vs. -3.177 [25<sup>th</sup>-75<sup>th</sup> percentile -6.300 to -1.015];  $p < 0.001$ ).

**Figure S2. Degree of thin-cap area change between the three groups based on the tertile of thin-cap area at baseline.**



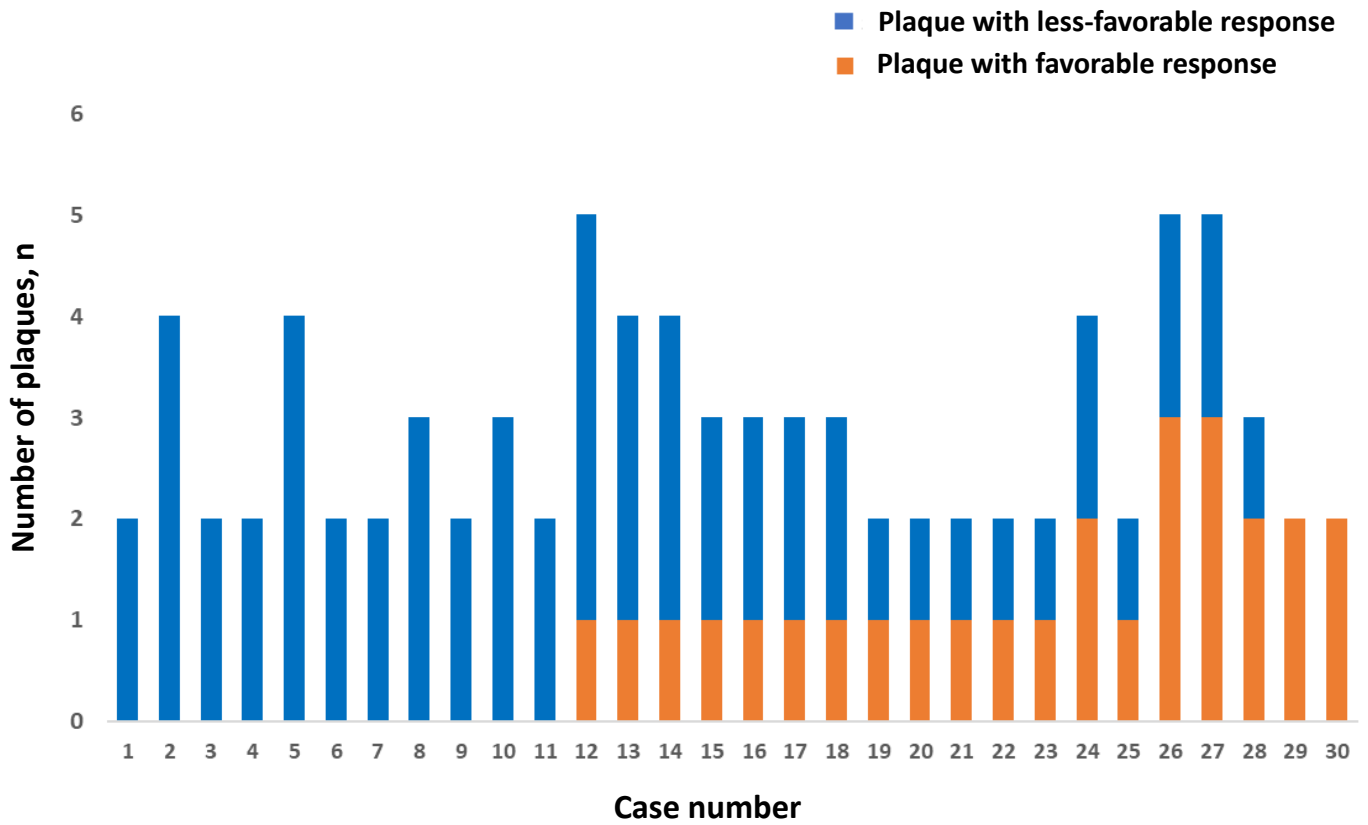
Non-culprit lipid plaques were divided into three groups based on the tertile of thin-cap area at baseline (thin-cap area at baseline: 0.505 [25<sup>th</sup>-75<sup>th</sup> percentile 0.195 to 1.066] in the small tertile, 2.852 [25<sup>th</sup>-75<sup>th</sup> percentile 2.153 to 3.698] in the mid tertile, 8.419 [25<sup>th</sup>-75<sup>th</sup> percentile 6.034 to 10.715] mm<sup>2</sup> in the large tertile). The reduction of thin-cap area was greatest in the large tertile of baseline thin-cap area, followed by the mid tertile, and small tertile (small tertile vs. mid tertile vs. large tertile: -0.010 [25<sup>th</sup>-75<sup>th</sup> percentile -0.355 to 0.553] vs. -1.427 [25<sup>th</sup>-75<sup>th</sup> percentile -2.620 to 0.440] vs. -4.624 [25<sup>th</sup>-75<sup>th</sup> percentile -7.368 to -2.440]; p < 0.001).

**Figure S3. Degree of thin-cap area change between the three groups based on the tertile of low-density lipoprotein cholesterol reduction.**



Non-culprit lipid plaques were divided into three groups based on the tertile of low-density lipoprotein (LDL) cholesterol reduction (LDL cholesterol reduction: 11.5 [25<sup>th</sup>-75<sup>th</sup> percentile 9.0 to 17.0] mg/dl in the low tertile, -11.8 [25<sup>th</sup>-75<sup>th</sup> percentile -18.1 to -6.3] mg/dl in the mid tertile, -53.8 [25<sup>th</sup>-75<sup>th</sup> percentile -62.2 to -43.0] mg/dl in the high tertile). The reduction of thin-cap area was not significantly different among the three tertiles (low tertile vs. mid tertile vs. high tertile: -0.942 [25<sup>th</sup>-75<sup>th</sup> percentile -3.103 to -0.008] vs. -0.804 [25<sup>th</sup>-75<sup>th</sup> percentile -3.183 to 0.480] vs. -1.026 [25<sup>th</sup>-75<sup>th</sup> percentile -3.682 to 0.277]; p = 0.927).

**Figure S4. Internal consistency of plaque responses within individual patients.**



Among 84 patients, 30 patients had more than 2 non-culprit plaques. Of those, 11 patients had only plaques with a less-favorable response, 2 patients had only plaques with a favorable response, and 17 patients had both plaques with favorable and less-favorable responses.