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Et al.

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Expression of the Integrin Beta 8 Gene (ITGB8) in Epicardial Adipose Tissue is Highly and Directly Correlated with the Degree of Coronary Atherosclerosis

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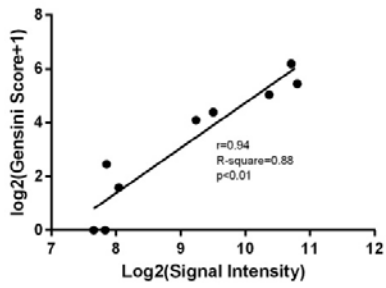
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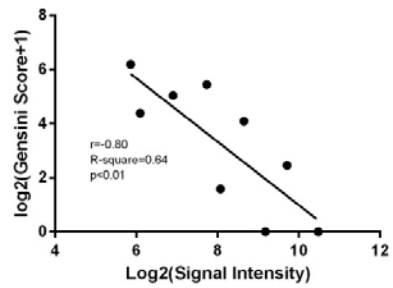
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Background: In patients with coronary artery disease (CAD), epicardial adipose tissue (EAT) expression of inflammatory genes is high while expression of anti-inflammatory genes is low. We hypothesized that expression of certain genes in EAT would correlate directly with the degree of adjacent CAD. **Methods:** EAT and paired subcutaneous adipose tissue (SAT) samples were collected from cardiac surgery patients (n=9) with and without CAD. RNA was isolated and hybridized to Affymetrix 1.0 ST chips. Genes differentially expressed in EAT vs. SAT were identified. Probe intensities were correlated with the severity of CAD in each patient using the Gensini score. **Results:** 35 genes were differentially expressed in EAT at >3.0 fold change (p<0.05). Of these, 14 were correlated with the Gensini score. Expression of ITGB8 had the strongest positive correlation (r=0.94, p<0.01), while TGM2 had the strongest negative correlation (r=-0.80, p<0.01). Importantly, neither of these correlations held true in SAT (Fig. 1). **Conclusions:** Expression of ITGB8 is directly correlated with CAD severity. ITGB8 has been previously shown to be expressed by fibroblasts and functions to activate TGF β . TGF β signaling has also been correlated with advanced atherosclerosis. We speculate that EAT expression of ITGB8 may have pro-inflammatory effects, possibly by activating TGF β , and stimulating recruitment of dendritic cells or T cells to secondary lymphoid organs in EAT. Whether or not this is the case is a goal of future studies.

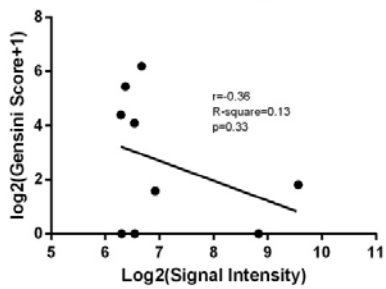
Correlation of Epicardial Adipose Expression of ITGB8 and Severity of CAD



Correlation of Epicardial Adipose Expression of TGM2 and Severity of CAD



Correlation of Subcutaneous Adipose Expression of ITGB8 and Severity of CAD



Correlation of Subcutaneous Adipose Expression of TGM2 and Severity of CAD

