

Extracellular Matrix and Adhesion Molecules

The extracellular matrix (ECM), the substratum onto which cells attach via cell surface adhesion molecules, helps define tissue shape, structure, and function. The ECM is composed of proteoglycans and glycoproteins such as fibronectin, laminin, and collagen. Adhesion molecules responsible for both cell-ECM and cell-cell interactions include the integrins, cadherins, selectins, ICAMs, VCAMs, and NCAMs. Matrix metalloproteinases degrade the ECM to redefine structure, and their action is balanced by their natural inhibitors such as the SERPIN and TIMP protein families. ECM and adhesion molecules are important for normal cell growth, division, differentiation, migration and even apoptosis. Disease states (such as tumor metastasis, rheumatoid arthritis, and certain cardiovascular and central nervous system disorders) and pathophysiological processes (such as wound healing and inflammation) also rely on these proteins. The Oligo GEArray® DNA microarrays and the RT² Profiler™ PCR Arrays from SuperArray Bioscience both include a wide selection of genes from these ECM and adhesion molecule families.

RT² Profiler™ PCR Arrays

The Human Extracellular Matrix and Adhesion Molecules RT² Profiler™ PCR Array profiles the expression of 84 genes important for cell-cell and cell-matrix interactions. Using real-time PCR, you can easily and reliably analyze expression of a focused panel of genes related to cellular adhesion.

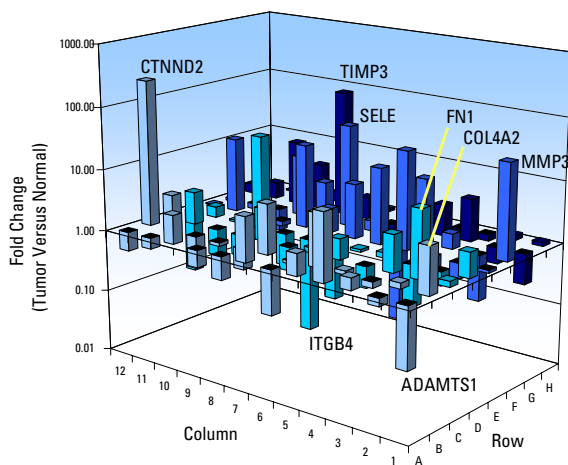


Figure 1: Compare the relative expression of 84 cellular adhesion genes between normal human breast and a human breast tumor. Template cDNAs prepared from normal human breast and human breast tumor total RNA (BioChain Institute, Inc.) were characterized using the Human ECM & Adhesion Molecules RT² Profiler™ PCR Array (APH-013A) and the RT² Real-Time™ SYBR Green / Fluorescein PCR Master Mix (PA-011) on the Bio-Rad iCycler®. The 3D Profile depicts the fold difference in gene expression between the samples as the appropriate z-axis displacement from the xy plane representing each gene's position in the PCR Array. Key genes displaying significantly different levels of expression between the two samples are highlighted. Note that some genes observed to have differential expression (ADAMTS1, CTNND2, MMP3, and SELE) using the PCR Array were not detected by the microarray due to the enhanced sensitivity of real-time PCR over hybridization.

Oligo GEArray® Microarrays

The Oligo GEArray® Human Extracellular Matrix & Adhesion Molecules Microarray profiles the expression of 113 significant genes related to ECM-cell and cell-cell interactions. Through a simple side-by-side hybridization experiment you can monitor changes in the expression of these genes between your samples.

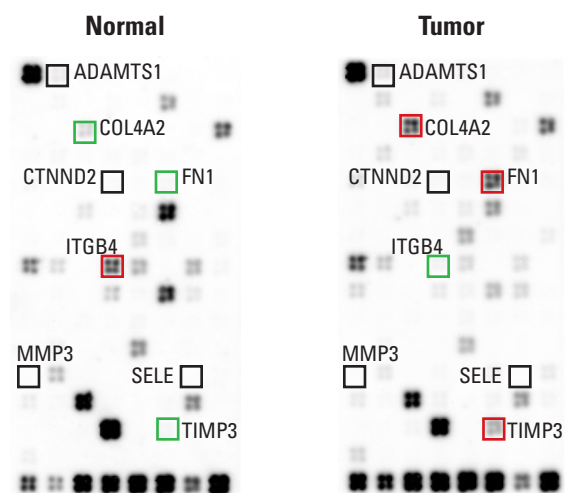


Figure 2: Compare the relative expression of 84 cellular adhesion genes between normal human breast and a human breast tumor. RNA obtained as described in Figure 1 was converted to biotinylated cRNA using the TrueLabeling-AMP™ 2.0 Kit (GA-030). The cRNA (2 µg) was hybridized to the Oligo GEArray® Human Extracellular Matrix and Adhesion Molecules Microarray using the HybPlate™ Format (EHS-013). The arrays were processed and exposed in a single GEArray® Express HybPlate. Key genes displaying significantly different levels of expression between the two samples are highlighted. Note that some genes observed to have differential expression (ADAMTS1, CTNND2, MMP3, and SELE) using the PCR Array were not detected by the microarray due to the enhanced sensitivity of real-time PCR over hybridization.

Extracellular Matrix and Adhesion Molecules RT² Profiler™ PCR Arrays

Description	Cat. No.
Human ECM and Adhesion Molecules	APH-013*
Mouse ECM and Adhesion Molecules	APM-013*

*See page 7 for PCR Array Buyer's Guide

Extracellular Matrix and Adhesion Molecules Oligo GEArrays®

Description	HybPlate	HybTube
Human ECM and Adhesion Molecules	EHS-013	OHS-013
Mouse ECM and Adhesion Molecules	EMM-013	OMM-013
Rat ECM and Adhesion Molecules	Inquire	ORN-013