

Oligo GEMArray® Human Cardiovascular Disease Biomarkers Microarray

HybTube Format Cat. No. [OHS-037](#)
HybPlate Format Cat. No. [EHS-037](#)

Description

The Oligo GEMArray® Human Cardiovascular Disease Biomarkers Microarray profiles the expression of 113 genes useful as molecular markers for cardiovascular disease progression. This array is designed with clinical researchers and research pathologists in mind. Genes that may serve as diagnosis and/or prognosis markers for the principal cardiovascular diseases, heart disease and stroke are represented. Genes involved in atherosclerosis and hypertension are represented including genes involved in the related processes of inflammation, apoptosis, and cell adhesion. Biomarkers for risk of cardiovascular disease and genes associated with a failing or infarcted heart are selected for this array based on published studies of *in vivo* and *in vitro* cardiovascular disease models. A complete expression profile of these genes should serve as an effective tool to unlock the molecular mechanisms that govern the onset and progression of cardiovascular diseases. Through a simple side-by-side hybridization experiment you can determine differential gene expression between your samples.

Functional Gene Groupings

Cell Adhesion Molecules:

Cell-Cell Adhesion: EVA1, ICAM1, ITGA7, ITGA8, ITGB1, VCAM1.

Cell-Matrix Adhesion: ITGA1, ITGA10, ITGA4, ITGA2, ITGA2B, ITGA3, ITGA5, ITGA6, ITGA7, ITGA8, ITGA9, ITGAE, ITGAL, ITGAM, ITGAV, ITGAX, ITGB1, ITGB2, ITGB3, ITGB4, ITGB5, ITGB6, ITGB7, ITGB8.

Other Cell Adhesion Molecules: CCL2 (MCP-1), CD40LG (TNFSF5 / CD40 Ligand), IL18, IL8, MSLN, PECAM1, SAA1, SELE (E-Selectin), SELL (L-Selectin), SELP (P-Selectin), SELPLG, TNF, VWF.

Immune Response Related Molecules:

Cellular Defense Response: CCR2, IL10, IL18, ITGB1.

Cytokine Biosynthesis: APOA2, CCR2, IFNG, IL10, IL18, IL1B, IL1RN, SAA1.

Humoral Immune Response: CCL2 (MCP-1), CCR2, CD40 (TNFRSF5), CRLF1, IL1B, IL6, ITGB2, NFKB1.

Immune Cell Activation: APOA2, CD40 (TNFRSF5), IL8, CD40LG (TNFSF5 / CD40 Ligand), IL10, IL18, NOS2A.

Inflammatory Response: CCL2 (MCP-1), CCR2, CD40 (TNFRSF5), CD40LG (TNFSF5 / CD40 Ligand), CRP, IL10, IL1B, IL1RN, IL8, ITGB2, NFKB1, NOS2A, PLA2G7 (Lp-PLA2), SAA1, SELE (E-Selectin), TNF.

Other Genes Related to the Immune Response: APOE, F3, FAS, FASLG (FASL, TNFSF6), IL6ST, LTA, LTB, VWF.

Apoptosis Genes:

Anti-apoptosis: CCL2 (MCP-1), CD40LG (TNFSF5 / CD40 Ligand), FAS, IL10, NFKB1, TNF.

Induction of Apoptosis: APOE, FAS, FASLG (FASL, TNFSF6), IL18, LTA.

Other Chromatin Modification Molecules: CD40 (TNFRSF5), IL1B, ITGB2, TNFRSF1A (TNF-RI), TNFRSF1B (TNF-RII).

Extracellular Molecules (ECMs):

ECM Proteases: ACE, F7, ITGA10, ITGA2, LPA (Lipoprotein A), MMP1, MMP13, MMP2, MMP9, PAPP, PLAT (tPA), PLAU.

ECM Protease Inhibitors: LPA (Lipoprotein A), SERPINE1 (PAI-1), TIMP1.

Fibrinogen Complex: FGA (Fibrinogen alpha), FGB (Fibrinogen beta), FGG.

Other ECM Molecules: AMH, APOA1, APOA2, APOA4, APOA5, APOB, APOC1, APOC2, APOC3, APOD, APOE, APOF, APOH, CCL2 (MCP-1), CRLF1, CRP, CTF1, EDN1 (ET1, endothelin 1), EDN2 (ET2, endothelin 2), EDN3 (ET3, endothelin 3), FASLG (FASL, TNFSF6), GRN, IFNG, IL10, IL18, IL1B, IL1RN, IL6, IL8, NPPA, NPPB, PLA2G7 (Lp-PLA2), PLTP, PON1, PON2, SAA1, TNFRSF1A (TNF-RI), VWF.

Cell Growth Related Molecules:

Cell Proliferation: CTF1, EDN1 (ET1, endothelin 1), FGA (Fibrinogen alpha), FGB (Fibrinogen beta), FGG (Fibrinogen gamma), GRN, IL1B, IL6, IL8, TIMP1.

Growth Factors: AMH, EDN2 (ET2, endothelin 2), GLG1, GRN, IL10, IL18, IL1B, IL1RN, IL6, IL8, VWF.

Other Molecules Related to Cell Growth: IFNG, ITGAL, ITGB2, NPPB, PAPP, PECAM1, PPARG, SELL.

Blood Coagulation Related Molecules:

Platelet Activation: CD40 (TNFRSF5), CD40LG (TNFSF5 / CD40 Ligand), SAA1, VWF.

Other Genes Related to Blood Coagulation: F3, F7, FGA (Fibrinogen alpha), FGB (Fibrinogen beta), FGG (Fibrinogen gamma), ITGA2, ITGB3, LPA (Lipoprotein A), PLAT (tPA), PLAU (uPA), PLAUR (uPAR), SERPINE1 (PAI-1), THBD (thrombomodulin).

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Circulation Genes:

Regulation of Blood Pressure: ACE, EDN1 (ET1, endothelin 1), EDN2 (ET2, endothelin 2), EDN3 (ET3, endothelin 3), FGA (Fibrinogen alpha), FGB (Fibrinogen beta), FGG (Fibrinogen gamma), NPPA, NPPB.

Regulation of Heart Contraction Rate: TNNT2, TNNT3.

Other Genes Related to Circulation: APOA1, APOA4, APOB, APOC2, APOE, DBP, LPA (Lipoprotein A), MTHFR, OLR1 (oxLDL).

Lipid Metabolism Related Genes:

Cholesterol Metabolism: APOA1, APOB, APOE, APOF, CETP.

Lipoprotein Metabolism: APOA1, APOA2, APOA4, APOA5, APOC1, APOC2, APOC3, APOD, APOE, APOF.

Other Genes Related to Lipid Metabolism: APOC4, APOH, HSD11B1, LPA (Lipoprotein A), PLA2G7 (Lp-PLA2), PLTP, PPARG, SAA1.

Genes Associated with a Failing or Infarcted Heart: CKM, CRP, CTF1, F3, IL6ST, MB, NPPA, NPPB, TNNT1, TNNT2, TNNT3.

Storage Conditions

Please check the kit components immediately after you receive this package. SuperArray is only responsible for missing items reported within two (2) business days of receipt.

GEArray microarrays are shipped at ambient temperature enclosed in either a HybTube or ExpressPak Storage Box. They should be stored at -20°C upon receipt.

References

1. Blake GJ, Ridker PM. Inflammatory bio-markers and cardiovascular risk prediction. *J Intern Med.* 2002 Oct; **252** (4): 283-94.
2. Shin WS, Szuba A, Rockson SG. The role of chemokines in human cardiovascular pathology: enhanced biological insights. *Atherosclerosis.* 2002 Jan; **160** (1): 91-102.
3. Pai JK, Curhan GC, Cannuscio CC, Rifai N, Ridker PM, Rimm EB. Stability of novel plasma markers associated with cardiovascular disease: processing within 36 hours of specimen collection. *Clin Chem.* 2002 Oct; **48** (10): 1781-4.
4. Schumacher A, Seljeflot I, Sommervoll L, Christensen B, Otterstad JE, Arnesen H. Increased levels of endothelial haemostatic markers in patients with coronary heart disease. *Thromb Res.* 2002 Jan 1; **105**(1): 25-31.
5. May AE, Schmidt R, Kanse SM, Chavakis T, Stephens RW, Schomig A, Preissner KT, Neumann FJ. Urokinase receptor surface expression regulates monocyte adhesion in acute myocardial infarction. *Blood.* 2002 Nov 15; **100** (10): 3611-7.
6. Frijns CJ, Kappelle LJ. Inflammatory cell adhesion molecules in ischemic cerebrovascular disease. *Stroke.* 2002 Aug; **33** (8): 2115-22.