Panomics

QuantiGene® Blood

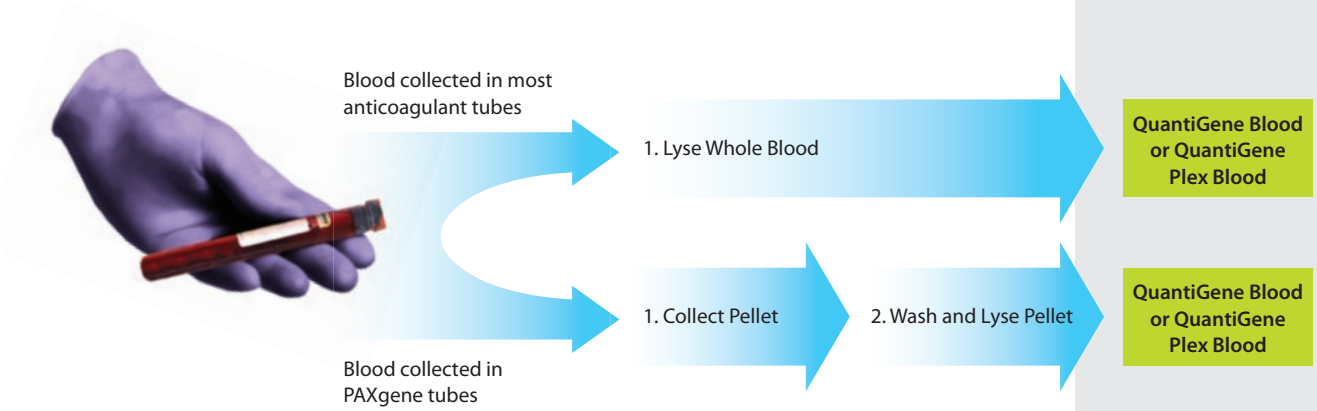
Gene Expression Profiling Solutions

Introduction

Blood represents a unique sample type in terms of availibility, ease of collection and its ability to act a surrogate tissue for clinical research because of its critical role in immune response. There are literally millions of archived blood samples stored globally with well annotaed clinical outcome, these samples represent a vast resource for retrospective studies, in fields such as biomarker discovery and gene-disease association.

The Challenges Inherent to Blood Samples

Blood gene expression measurements are complicated by a number of factors: high nuclease activity, interfering proteins and RNAs from plasma and erythrocytes, and sample processing. We have overcome these problems by developing proprietary blood lysis reagents which completely preserve the mRNA immediately. This approach also alleviates the changes in expression patterns that occur during blood purification, RNA isolation and enzymatic modification steps.



Workflow for Direct RNA Profiling from Whole Blood. Fresh whole blood collected in common anti-coagulent tubes (e.g., EDTA, citrate or heparin), or stabilized in PAXgene tubes can be assayed for gene expression without RNA isolation.

Highlights

No RNA Purification—
Work directly from whole blood or PAXgene stabilized whole blood

No Reverse Transcription—
Eliminate biases against messages that do not reverse transcribe well

No Target Amplification—
Eliminate biases against messages that do not amplify proportionately due to either random events or sequence composition

No Blood Fractionation or Globin RNA Reduction required—
Minimize sample handling and simplify workflow

Flexible Format—
Single target or multiplex (3–30) assays

Try the QuantiGene® Blood Reagent System in your biomarker discovery program today. It is highly quantitative, reproducible and precise; allied with a simple and robust workflow, allowing considerable time savings over comparable methods such as real time PCR.

Assay Specifications

Assay Sensitivity: 6,000 copies (QG), 24,000 copies (QGP)

Assay CV: <15% intra-run, <10% inter-run

Dynamic Range: >3 logs

Compatible Sample Types: Whole blood, PAXgene stabilized whole blood, frozen whole blood

Anticoagulants Supported: Heparin, EDTA, Citrate

Assay Format: 96-well plate

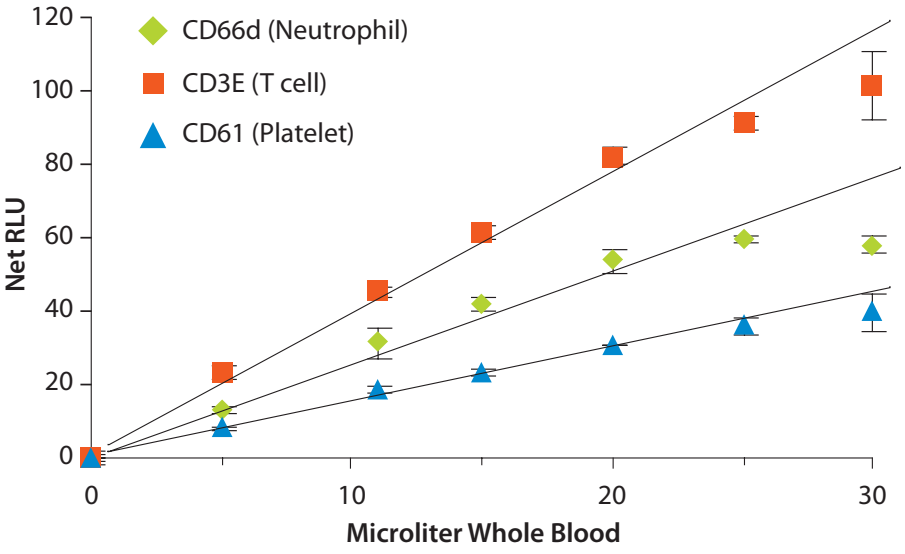
Targets/Well: 1 (QG), 3–30 (QGP)

Hardware Requirements: Microplate Luminometer (QG) or Luminex flow cytometer (QGP)

QuantiGene bDNA Technology Overview

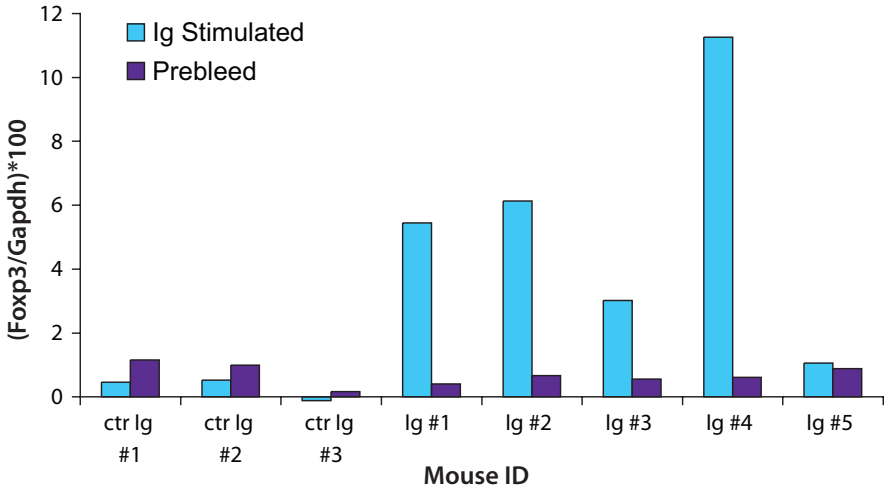
Branched DNA technology is a sandwich nucleic acid hybridization assay that provides a unique approach for RNA detection and quantification by amplifying the reporter signal rather than the target sequence. By measuring RNA directly from the sample source, the assay avoids variations or errors inherent to extraction and amplification of RNA. Branched DNA technology is the basis of a clinically proven viral load tests commercialized by Bayer Corporation as VERSANT® HIV-1 3.0, HCV 3.0 and HBV and has been in use for over a decade. The assay format is available in both singleplex coated-plate based format or as a multiplex assay utilizing the Luminex xMAP technology.

Monitor Gene Expression of Specific Sub Populations



Quantitative Detection of Cell Marker Genes in Heparinized Whole Blood Using the QuantiGene Blood Reagent System. Quantitative detection of mRNA expressed in minority blood cell populations using a single drop of whole blood. Fresh, heparinized whole blood was lysed and assayed for various cell markers using target-specific Probe Sets. The mean CVs were 6%.

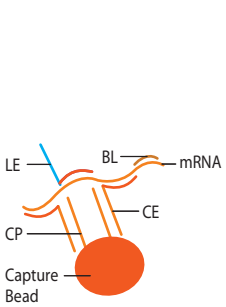
Expression Analysis of Foxp3 Gene in Regulatory T Cells

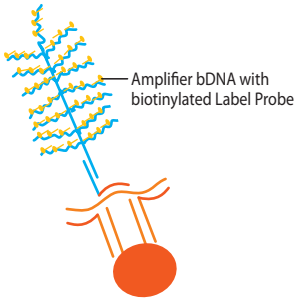


This study shows the expression of the Foxp3 gene, a marker for regulatory T cells, after stimulation by an experimental antibody.

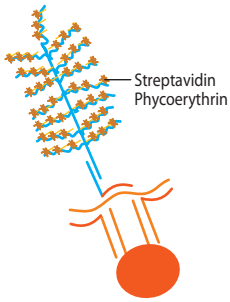
Five mice were treated with the antibody (Ig) and three mice were treated with a control antibody (ctrl Ig). Blood was drawn before stimulation (prebleed) and 6 days after stimulation (Ig stimulated) from the same animal, and measured for Foxp3 and normalized with Gapdh with the QuantiGene Blood Reagent System.

Luminex xMAP Technology for Multi Analyte Analysis

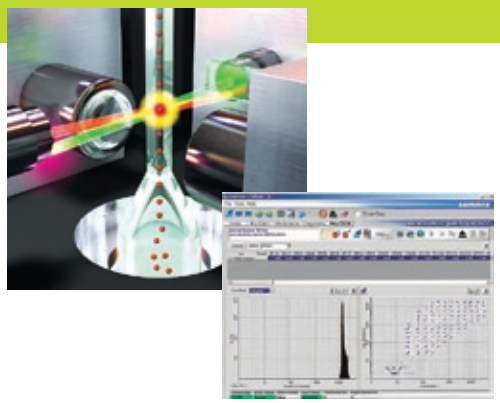




Illus 2a



Illus 2b



Step 1: Bead Capture

Specific mRNA transcripts are captured to their respective beads through Capture Extender (CE) Capture Probe (CP) interaction during an overnight hybridization at 58°C.

Step 2: Signal Amplification

a) Sequential hybridization of the bDNA amplification molecule and biotinylated Label Probe, respectively, for an hour at 54°C.

b) Binding with Streptavidin-conjugated Phycoerythrin (SA-PE) at room temperature for 30 minutes.

Step 3: Detection & Analysis

The sample is analyzed on a Luminex* instrument. The level of SA-PE fluorescence is proportional to the amount of mRNA transcripts captured by the bead.

*Bio-Plex suspension array system or other Luminex-based array systems.

Ordering Information

QuantiGene Blood and QuantiGene Plex Blood Reagent Systems are both comprised of 3 modules. Each of the modules is sold separately and is available in multiple sizes.

For pricing and more information visit our website at www.panomics.com or call us at 1.877.726.6642.

QuantiGene Blood Reagent System

Product	Size	Cat. No.
QuantiGene Blood Assay Kits		
QuantiGene Blood Assay Kit	2-Plate	QB0001
QuantiGene Blood Assay Kit	10-Plate	QB0002
QuantiGene Blood Assay Kit	5 x 10-Plate	QB0003
QuantiGene Blood Sample Processing Kits		
QuantiGene Blood Sample Processing Kit—Whole Blood	2-Plate	QB0100
	10-Plate	QB0101
QuantiGene Blood Sample Processing Kit—PAXgene Blood	192 samples*, 2-Plate	QB0102
	960 samples*, 10-Plate	QB0103
** Each prepared PAXgene blood sample is sufficient for running 4 assay wells.*		
QuantiGene Blood Target-Specific Probe Sets		
QuantiGene Blood Probe Set, Catalog	200 Rxns	See Website
	1,000 Rxns	See Website
QuantiGene Blood Probe Set, By Request	200 Rxns	QB0050
	1,000 Rxns	QB0051
QuantiGene Blood Products for New Users		
QuantiGene Blood Evaluation Kit—Whole Blood	2-Plate	QB0004
QuantiGene Blood Evaluation Kit—PAXgene Blood	2-Plate	QB0005

QuantiGene Plex Blood Reagent System

Product	Size	Cat. No.
QuantiGene Plex Blood Assay Kits		
QuantiGene Plex Blood Assay Kit	1-Plate	PB0001
QuantiGene Plex Blood Assay Kit	3-Plate	PB0002
QuantiGene Plex Blood Assay Kit	10-Plate	PB0003
QuantiGene Plex Blood Sample Processing Kits		
QuantiGene Plex Blood Sample Processing Kit—Whole Blood	1-Plate	PB0100
	3-Plate	PB0101
	10-Plate	PB0102
QuantiGene Plex Blood Sample Processing Kit—PAXgene Blood	96 samples*, 1-Plate	PB0103
	288 samples*, 3-Plate	PB0104
	960 samples*, 10-Plate	PB0105
** Each prepared PAXgene blood sample is sufficient for running 4 assay wells.*		
QuantiGene Plex Blood, Plex Sets		
QuantiGene Plex Blood, Plex Set, By Request	96 Assays, 03–30 Plex	800000-1##
	3 x 96 Assays, 03–30 Plex	800000-2##
	10 x 96 Assays, 03–30 Plex	800000-3##
QuantiGene Plex Blood, Plex Set, Catalog	Multiple	See Website
## Defines the plex number from 03–30.		

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