



Newborn Screening Quality Assurance Program

PROFICIENCY TESTING

TREC
Quarterly Report

Volume 2, No. 1

February 2012

INTRODUCTION

This report is the quarterly summary of all data reported within the specified data-reporting period for the Quarter 1, 2012, pilot proficiency testing program for T-cell receptor excision circle (TREC) analysis in dried-blood spots (DBS) to detect severe combined immunodeficiency (SCID). The attached tables provide the certification profiles for the distributed specimens, the verification of your reported data, and the summary of reported categorical results. We distribute this performance testing (PT) report to all participants, state laboratory directors, and program colleagues by request.

On January 9, 2012, a panel of five unknown DBS specimens was distributed to nine laboratories in the United States to analyze TREC content in peripheral blood.

PARTICIPANT RESULTS

This panel consisted of five DBS specimens prepared from human blood, including cord blood from unaffected individuals and modified adult blood depleted of mononuclear cells or leukocytes (specimens 112R1, 112R2, 112R3, 112R4, and 112R5).

Evaluations are based on the source of specimen and previously established consensus categorical results

from core laboratories. All laboratories used laboratory developed tests. We requested only categorical results: 'No follow-up required (Screen Negative)' or 'Follow-up required' on each specimen since quantitative results vary significantly between laboratories using different test methods and calibrators.

We processed data from nine participants. Two false-positive assessments were reported for specimen 112R3. False-positive misclassifications, which are a cost-benefit issue and a credibility factor for follow-up programs, should be monitored and kept as low as possible. ❖

The Newborn Screening Quality Assurance Program will ship next quarter's pilot PT specimens for TREC on April 2, 2012. ❖

ACKNOWLEDGMENTS

We would like to thank Barbara Waters-Pick (Duke University Medical Center) for the supply of umbilical cord blood. ❖

CDC/APHL

This program is cosponsored by the Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories (APHL).

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NEWBORN SCREENING QUALITY ASSURANCE PROGRAM
T-CELL RECEPTOR EXCISION CIRCLE (TREC) ANALYSIS IN DRIED-BLOOD SPOTS
QUARTER 1– FEBRUARY 2012

FREQUENCY OF REPORTED CLINICAL ASSESSMENTS

Specimen	No follow-up required (Screen Negative)	Follow-up required
112R1	0	9
112R2	9	0
112R3	7	2
112R4	9	0
112R5	0	9

LABORATORY METHODS

Method	Number of Laboratories
Real Time PCR	9
Other	0

NEWBORN SCREENING QUALITY ASSURANCE PROGRAM

T-CELL RECEPTOR EXCISION CIRCLE (TREC) ANALYSIS IN DRIED-BLOOD SPOTS

QUARTER 1– FEBRUARY 2012

SPECIMEN CERTIFICATION

Specimen	No follow-up required (Screen Negative)	Follow-up required	Specimen Description
112R1		2	SCID-like specimen; low or no TREC; reference gene within standard reference range
112R2	1		Normal specimen; medium TREC level; reference gene within standard reference range
112R3	1		Normal specimen; TREC level below population average but within reference range; reference gene within standard reference range
112R4		2	Leukocyte-reduced blood; TREC and reference gene levels both below standard reference range.
112R5	1		Normal specimen; medium TREC level; reference gene within standard reference range

1 = No follow-up required (Screen Negative)

2 = Follow-up required

This **NEWBORN SCREENING QUALITY ASSURANCE PROGRAM** report is an internal publication distributed to program participants and selected program colleagues. The laboratory quality assurance program is a project cosponsored by the **Centers for Disease Control and Prevention (CDC)** and the **Association of Public Health Laboratories**.

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