



Newborn Screening Quality Assurance Program

PROFICIENCY TESTING

**TREC
Quarterly Report**

Volume 2, No. 2

May 2012

INTRODUCTION

This report is the quarterly summary of all data reported within the specified data-reporting period for the Quarter 2, 2012, pilot proficiency testing (PT) 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 proficiency testing report to all participants, state laboratory directors, and program colleagues by request.

On April 2, 2012, a panel of five unknown DBS specimens was distributed to eleven 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 212R1, 212R2, 212R3, 212R4, and 212R5).

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 eleven participants. One false-positive assessment was reported for specimen 212R3. 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 July 9, 2012. ❖

ACKNOWLEDGMENTS

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

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NEWBORN SCREENING QUALITY ASSURANCE PROGRAM
T-CELL RECEPTOR EXCISION CIRCLE (TREC) ANALYSIS IN DRIED-BLOOD SPOTS
QUARTER 2- MAY 2012

FREQUENCY OF REPORTED CLINICAL ASSESSMENTS

Specimen Number	No follow-up required (Screen Negative)	Follow-up required
212R1	11	0
212R2	0	11
212R3	10	1
212R4	11	0
212R5	0	11

LABORATORY METHODS

Method	Number of Laboratories
Real Time PCR	11
Other	0

NEWBORN SCREENING QUALITY ASSURANCE PROGRAM

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

QUARTER 2– MAY 2012

SPECIMEN CERTIFICATION

Specimen Number	No follow-up required (Screen Negative)	Follow-up required	Specimen Description
212R1	1		Normal specimen with medium TREC level; reference gene within standard reference range
212R2		2	Leukocyte-reduced blood; TREC and reference gene levels both below standard reference range
212R3	1		Normal specimen; TREC level below population average but within reference range; reference gene within standard reference range
212R4	1		Normal specimen with medium TREC level; reference gene within standard reference range
212R5		2	SCID-like specimen; low or no TREC; 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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