

Newborn Screening Quality Assurance Program

PROFICIENCY TESTING

**TREC
Quarterly Report**

Volume 4, No. 1

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INTRODUCTION

This report is the Quarterly summary of all data reported within the specified data-reporting period for the Quarter 1, 2014, 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, summary of reported categorical results and the verification of your reported data. We distribute this PT report to all participants, state laboratory directors, and program colleagues by request.

On January 13, 2013, a panel of five unknown DBS specimens was distributed to twenty 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 114R1, 114R2, 114R3, 114R4, and 114R5).

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 qualitative, 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 twenty participants. Two false-positive and no false-negative assessments were reported. False-positive assessments 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 7, 2014. ❖

ACKNOWLEDGMENTS

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and the Association of Public Health Laboratories (APHL).

Direct inquiries to:
Centers for Disease Control and Prevention (CDC)
4770 Buford Highway, NE, MS/F43
Atlanta, GA 30341-3724

Phone: 770-488-7945
FAX: 770-488-4255
E-mail: JMei@cdc.gov

Editors: Joanne Mei
Irene Williams



NEWBORN SCREENING QUALITY ASSURANCE PROGRAM

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

Quarter 1 – February 2014

SPECIMEN CERTIFICATION

Specimen Number	No follow-up required (Screen Negative)	Follow-up required	Specimen Description
114R1		2	Blood with 'buffy-coat' removed - TREC and reference gene levels both below standard reference range.
114R2	1		Normal specimen; below average TREC level, reference gene level within standard reference range
114R3	1		Normal specimen; below average TREC level, reference gene level within standard reference range
114R4		2	SCID-like specimen; low or no TREC, reference gene level within standard reference range
114R5	1		Normal specimen; medium TREC level, reference gene level within standard reference range

1 = No follow-up required (Screen Negative)

2 = Follow-up required

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

Quarter 1 – February 2014

FREQUENCY OF REPORTED CLINICAL ASSESSMENTS

Specimen Number	No follow-up required (Screen Negative)	Follow-up required
114R1	0	20
114R2	19	1
114R3	20	0
114R4	0	20
114R5	19	1

LABORATORY METHODS

Method	Number of Laboratories
63 Real Time PCR	20
Other	0

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**.

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
ATLANTA, GA 30341

Director

Thomas R. Frieden, M.D., M.P.H.

Acting Director

National Center for Environmental Health

Tanja Popovic, M.D., Ph.D.

Director

Division of Laboratory Sciences

James L. Pirkle, M.D., Ph.D.

Chief

Newborn Screening and Molecular Biology Branch

Carla Cuthbert, Ph.D.



Contributors: Barbara W. Adam
Paul Dantonio
Victor R. De Jesus, Ph.D.
Marie C. Earley, Ph.D.
Sharon Flores
David Foreman
Stephanie Foster
Elizabeth M. Hall
Christopher Haynes, Ph.D.
Sarah Klass
Francis Lee, Ph.D.
Lixia Li, Ph.D.
Timothy Lim, Ph.D.
Daniel Mandel, Ph.D.
Joanne Mei, Ph.D.
Nancy Meredith
Patrick Pickens
Kelsey Sheard
Jennifer Taylor, Ph.D.
Robert Vogt, Ph.D.
Irene Williams
Golriz Yazdanpanah
Hui Zhou, Ph.D.
Sherri Zobel

Production: Sarah Brown
Felicia Manning
Connie Singleton

ASSOCIATION OF PUBLIC HEALTH LABORATORIES
SILVER SPRING, MD 20910



President

Christine Bean, Ph.D., M.B.A., MT(ASCP)

Chairman, Newborn Screening and Genetics in Public Health Committee

Susan M. Tanksley, Ph.D.

Chairman, Newborn Screening Quality Assurance Quality Control Subcommittee

Patrick Hopkin, B.S.

INQUIRIES TO:

Irene Williams, Editor • Centers for Disease Control and Prevention (CDC)
Newborn Screening Quality Assurance Program • Mailstop F-43
4770 Buford Highway, N.E. • Atlanta, GA 30341-3724
Phone (770) 488-4582 • FAX (770) 488-4255 • E-mail: IWilliams1@cdc.gov