

## First ISNS Reference Preparation for Neonatal Screening for thyrotropin, phenylalanine and 17 $\alpha$ -hydroxyprogesterone in blood spots

L. H. Elvers · J. G. Loeber · J.-L. Dhondt · M. Fukushi ·  
W. H. Hannon · T. Torresani · D. Webster

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**Summary Background:** Neonatal screening for congenital disorders like phenylketonuria (PKU), congenital hypothyroidism (CH) and congenital adrenal hyperplasia (CAH) is generally performed in dried blood spots on filter paper. The analytes of interest for testing for PKU, CH and CAH are phenylalanine,

thyrotropin (TSH) and 17 $\alpha$ -hydroxyprogesterone (17OHP), respectively. The International Society for Neonatal Screening (ISNS) decided to prepare a combined reference preparation for the three analytes on filter paper Schleicher & Schuell #903, Whatman BFC180 and Toyo Roshi 545. This 'First ISNS Reference Preparation for Neonatal Screening for TSH, phenylalanine and 17OHP in blood spots' (1st ISNS-RPNS) has been prepared by the RIVM (Bilthoven). **Method:** The number of filter paper cards prepared, each with two sets of six blood spot calibrators, was 480, 42 and 69 for Schleicher & Schuell #903, Whatman BFC180 and Toyo Roshi 545, respectively. The volume of blood dispensed was 50  $\mu$ l. The range of concentrations for TSH was 1–121 mIU/L blood, for phenylalanine 65–865  $\mu$ mol/L blood and for 17OHP 2.2–302 nmol/L blood. **Results:** The linearity of the blood spot calibrators and the homogeneity of the batch (only tested for Schleicher & Schuell) were good. The differences between the three filter papers were small: i.e. the potency of the ISNS-RPNS on Whatman and Toyo Roshi in terms of Schleicher & Schuell was between 0.98 and 1.09 for the three analytes. **Conclusion:** The 1st ISNS-RPNS for TSH, phenylalanine and 17OHP can be said to be suitable as formal reference preparation and as a source for (re)calibrating kit calibrators.

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L. H. Elvers (✉) · J. G. Loeber  
Diagnostic Laboratory for Infectious Diseases  
and Perinatal Screening, National Institute for Public Health  
and the Environment, PO Box 1, 3720 BA,  
Bilthoven, The Netherlands  
e-mail: bert.elvers@rivm.nl

J.-L. Dhondt  
Hospital Saint Philibert, Lomme Cedex, France

M. Fukushi  
Sapporo City Institute of Public Health,  
Shiroishi-KU, Sapporo, Japan

W. H. Hannon  
Centers for Disease Control and Prevention,  
Newborn Screening Branch, Atlanta, Georgia, USA

T. Torresani  
Universitätskinderklinik, Zürich, Switzerland

D. Webster  
National Testing Center, Auckland AK1, New Zealand

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### Electronic Supplementary Material

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