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Newborn screening of Galactosemia

Fluorometric determination of total galactose from blood specimens dried on filter paper

- Enzymatic assay for total galactose
- Excellent reproducibility
- Stable reagents and long shelf life
- Compatible with current screening systems

CE

Neonatal Galactose

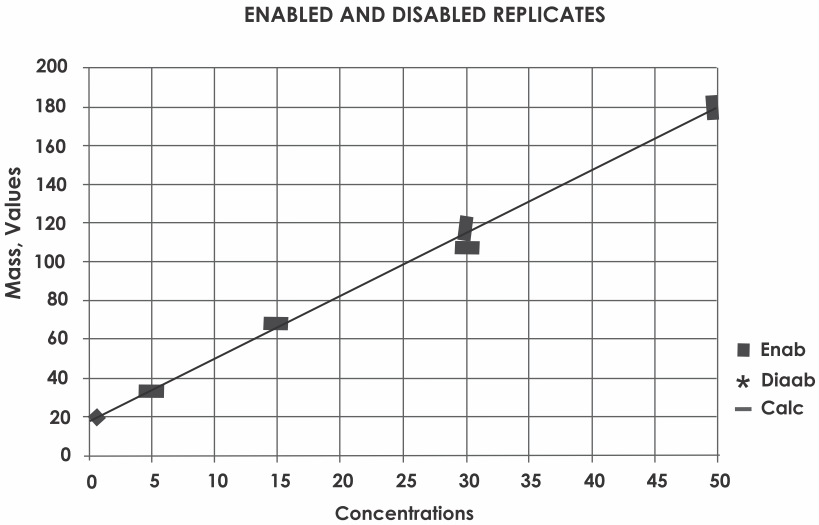
PRINCIPLE OF THE TEST

The determination is based on two reactions. In the first reaction alkaline phosphatase cleaves galactose from galactose-1-phosphate. In the second reaction galactose serves as a substrate for galactose dehyrogenase which reduces nicotinamidedinucleotide to form a fluorogenic product. Fluorescence intensity of the re- action is therefore proportional to the amount of galactose in the sample.

$$\text{galactose-1-phosphate} + H_2O \xrightarrow{\text{AFOS}} \text{galactose} + \text{phosphate}$$

$$\text{galactose} + \text{NAD} \xrightarrow{\text{GDH}} \text{galactono-lactone} + \text{NADH} + H^+$$

Abbreviations
AFOS = alkaline phosphatase
GDH = galactose dehydrogenase
NAD = b-Nicotinamide adenine dinucleotide



Typical calibration curve of neonatal galactose

Assay Procedure

1. Punch out 3.2 mm disks containing blood calibrators and controls in duplicates into the microtiter plate.
2. Punch out single 3.2 mm disks from patient specimens into microplate wells.
3. Add 20 µl of 80% ethanol into each well, incubate 60 minutes at +37°C, do not cover the plate.
4. Prepare the reaction mix just before use.
5. Add 200 µl of reaction mix into each well. Make sure that THE DISCS ARE COMPLETELY SOAKED IN THE LIQUID BEFOREINCUBATION
6. Cover the plate and incubate 30 min at 37°C with shaking speed of 900 rpm.
7. Add 100 µl of cold (+4 °C) stopping solution.
8. Transfer 200 µl of the final product into a white plate.
9. Measure the fluorescence (ex. 355 nm, em. 460 nm) between 15-60 minutes after the transfer.

Cat.no.	Product name	Plate type	Packing size	Regulatory status
6199850	Neonatal Galactose	96 well solid	960 wells	CE marked

Type 903 filter paper is used in all products.

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