



Total Galactose Test

The Astoria-Pacific SPOTCHECK[®] Galactose test is used as an aid in screening for Galactosemia, an inherited disorder of galactose metabolism caused by a decreased level of galactose-1-phosphate uridylyltransferase enzyme activity in newborns.

When galactose is ingested by an affected newborn, the galactose-1-phosphate accumulates intracellularly and blood and urine levels of galactose become elevated. Serum galactose measurements therefore can be used to diagnose and treat this disease.

The Astoria-Pacific SPOTCHECK[®] Analyzer automates the measurement of galactose in the newborn's sample by first hydrolyzing galactose-1-phosphate to simple galactose using alkaline phosphatase. The total galactose is then oxidized by NAD in the presence of galactose dehydrogenase to form galactonolactone and NADH.

The NADH produced in each sample is measured quantitatively with a fluorometer equipped with a specially designed flow-through flowcell. The resulting fluorescence at 465 nm, generated by excitation at 365 nm, is proportional to the total galactose concentration.

Simple galactose can also be measured quantitatively with this test. By removing the hydrolysis step, only simple galactose in the sample is oxidized by NAD with subsequent reduction to NADH. The resulting fluorescence is also measured at 465 nm and is proportional to the simple galactose concentration.

Whole blood, spotted on standardized filter paper, S&S[®] 903[™] or equivalent is suitable for analysis. The procedure is designed for use with one 1/8 inch spot but may be adapted to alternative punch protocols with appropriate validation.

Other tests, such as Phenylalanine or Uridyltransferase, can be run with the Galactose analysis simultaneously from the same extracted sample. Sample throughput is 90 per hour.

The SPOTCHECK[®] Total Galactose 50 Hour Reagent Kit is designed to be used on the Astoria-Pacific SPOTCHECK[®] Analyzer. The kit contains all necessary reagents needed for analysis and will provide approximately 50 hours of analyzer run time. Allowing for start up and calibrants, the approximate number of actual samples analyzed per kit is conservatively 2500.