TEST: FOLATE

PRINCIPLE:
Folates are a subset of vitamins related to pteroylglutamic acid (PGA) that function as co-enzymes in metabolic reactions involving the transfer of single carbon units. Folate and vitamin B12 are necessary for DNA synthesis, and consequently normal red blood cell maturation. Folate deficiency can lead to macrocytic (megaloblastic) anemia. Folate is obtained from dietary sources including fruits, green and leafy vegetables, yeast and organ meats. Folate is absorbed from the small intestine and stored in the liver. Low folate intake, malabsorption as a result of gastrointestinal diseases, pregnancy and the use of drugs such as phenytoin, oral contraceptives and excessive concentrations of alcohol are causes of folate deficiency. Low serum folate concentrations are an early indication of folate depletion and precede depletion in the tissues. Adequate folate concentrations during pregnancy are also important in the prevention of neural tube defects (NTD) in infants. Folate supplementation prior to conception and in the first weeks of pregnancy reduces the incidence of NTD affected births. [3]

SPECIMEN REQUIREMENTS:
2ml collected in a serum separator tube (gel barrier). Separate serum from cells ASAP or within 2 hours of collection by centrifugation. Stability after separation from cells: Ambient: 8 Hours; Refrigerated: 48 Hours; Frozen: 1 year (avoid repeated freeze/thaw cycles).

REJECTION CRITERIA: Plasma or other body fluids. Gross hemolysis

METHOD:
Enhanced Chemiluminescence.

REFERENCES:
1. Bailey Lynn B. (Ed.) *Folate in Health and Disease.* Shane B, Folate Chemistry and Metabolism. New York: Marcel Dekker; page 1; 1995.
2. Chanarin I. (ed) *The Megaloblastic Anaemias*. ed. 3. Oxford: Blackwell Scientific Publications; 1990.
3. MRC Vitamin Study Research Group. Prevention of Neural Tube Defects: Results of the Medical Research Council Study. *Lancet* 238: 131-137; 1991.
4. Bailey, Lynn B. (Ed.) *Folate in Health and Disease.* Lindenbaum J & Allen RH, Clinical Spectrum and Diagnosis of Folate Deficiency. New York: Marcel Dekker; page 43: 1995.

Normal range: 5.9 to > 24.8 ng/mL

Turnaround time: 7 business days