

**MACROCYTIC ANEMIA
PANEL, SERUM
(CLIA)**

Folate	ng/mL	>5.38
Vitamin B12	pg/mL	211-911

Interpretation

FOLATE RESULT IN ng/mL	REMARKS
0.35-3.37	Deficient
3.38-5.38	Indeterminate
>5.38	Normal

- Note:**
1. Drugs like Methotrexate & Leucovorin interfere with folate measurement
 2. To differentiate vitamin B12 & folate deficiency, measurement of Methyl malonic acid in urine & serum Homocysteine level is suggested
 3. Risk of toxicity from folic acid is low as it is a water soluble vitamin regularly excreted in urine

Comments

A large number of disorders can present with Macrocytic anemia, including B12 & Folate deficiency, MDS, Bone marrow infiltration, Chemotherapy and Hemolytic anemias. The commonest cause specially in developing countries is due to deficiency of folate and vitamin B12. Macrocytic anemia caused due to B12 / Folate deficiency has traditionally been called Megaloblastic anemia. Most common cause of folate deficiency is insufficient dietary intake secondary to either malnutrition or excessive cooking of vegetables. Deficiency can also result from elevated folate requirement as seen in pregnancy, severe hemolytic anemia, bone marrow malignancies and exfoliative skin disorders. Vitamin B12 deficiency occurs usually due to food bound B12 malabsorption (seen in elderly, gastric atrophy, H.pylori infection, acid suppressive therapy) and gastric / small bowel disorders causing intrinsic factor deficiency. However macrocytosis can manifest with or without anemia. Physiologic macrocytosis occurs in neonates and elderly patients.