



# TECHNICAL NOTICE

## SOUTH BEND MEDICAL FOUNDATION

June 2009

### Parvovirus B19 IgG and IgM Antibodies

**Effective Date:** July 1, 2009

**Performing Department:** Manual Laboratory

**Method:**

- IgG: sandwich enzyme immunoassay
- IgM: mu-capture sandwich enzyme immunoassay

**Use:** Qualitative detection of parvovirus B19 IgG and IgM antibodies

**Clinical Significance:**

Parvovirus B19 (B19) is the only known human pathogenic parvovirus. B19 infection has a wide range of disease manifestations depending on the immunologic and hematologic status of the hosts. It causes erythema infectiosum (known as fifth disease or slapped-cheek disease), an innocuous rash illness, in normal and immunocompetent children. Occasionally, fifth disease leads to an acute symmetric polyarthropathy that can mimic rheumatoid arthritis especially in adults. In patients with underlying hemolytic disorders and/or increased erythropoiesis, infections lead to a temporary failure of red blood cell production and transient aplastic crisis. Persistent B19 viremia manifests as pure red cell aplasia and chronic anemia in the immuno-compromised host. The infection can lead to fetal death in utero, hydrops fetalis or congenital anemia in the fetus due to their immature immune system. B19 infection is common in childhood and it occurs in adult life as well.

Detectable IgG is found in 50% of children by the age of 15 years and in more than 90% of elderly people. In immunocompetent patients, B19 DNA is only detectable in the first few days of infection. The diagnosis of acute B19 infection is therefore based on detection of IgM. IgM antibody remains detectable 2 to 3 months after infection. IgG usually is present by the seventh day of illness and remains detectable throughout life.

**Reference Range:**

	<b>IgM</b>	<b>IgG</b>
Negative	<0.9 IV	<0.6 IV
Equivocal	0.9-1.1 IV	0.6-1.1 IV
Positive	>1.1 IV	>1.1 IV

**Clinical Interpretation:**

<u><b>IgM</b></u>	<u><b>IgG</b></u>	<u><b>Interpretation of Results</b></u>
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- Neg.....Neg ..... Past infection is unlikely. Patient may be susceptible to Parvovirus B19 infection.
- Neg.....Equiv ..... Past exposure or infection cannot be excluded; fresh sample may provide more definitive results.
- Neg.....Pos ..... Past exposure/infection is likely. Minimal risk of B19 infection.
- Equiv ....Equiv ..... Suggestive of current or recent infection. Suggest confirming with fresh sample in 1 to 2 weeks.
- Equiv .....Pos ..... Indicative of current or recent infection. Suggest confirming with fresh sample in 1 to 2 weeks.
- Equiv .....Neg ..... Indicative of current or recent infection. Suggest confirming with fresh sample in 1 to 2 weeks.
- Pos.....Pos ..... Current or recent infection is likely. Fetus may be at risk.
- Pos.....Neg ..... Indicative of current or recent infection. Suggest confirming with fresh sample in 1 to 2 weeks.
- Pos .....Equiv ..... Indicative of current or recent infection. Suggest confirming with fresh sample in 1 to 2 weeks.

**Parvovirus B19 IgG and IgM Antibodies** *(continued)*:

**Specimen Requirements and Collection:**

- Collection: • Routine venipuncture
- Parallel testing is preferred
  - Label samples as: “acute” or “convalescent”
  - “Convalescent” samples must be received within 30 days from the receipt of acute samples
- Preferred Specimen: • Serum from gold top (SST) or red top (serum) tube
- Alternate Specimen: • Plasma from lavender top (EDTA) or green top (heparin) tube
- Requested Volume: • 1.0 mL
- Minimum Volume: • 0.5 mL
- Stability: • 48 hours room temperature (20-30°C) • 2 weeks refrigerated (2-8°C) • 1 year frozen (-20°C)
- Storage/Transport: • Refrigerated

**Testing Schedule:** • Monday and Thursday • Samples received by 6:00 am will be reported by 5:00 pm if negative

- Positive samples will be held for repeat testing in the next scheduled test run.

**Order:** • Parvovirus B19 IgG Antibody ..... Test #: **28252** ..... CPT: • 86747

- Parvovirus B19 IgM Antibody ..... Test #: **28253** ..... CPT: • 86747
- Parvovirus B19 IgG & IgM Antibodies ..... Test #: **28254** ..... CPT: • 86747 x 2

Please direct questions or comments regarding this notice to William J. Kaliney, M.D., Deborah H. Sun, Ph.D., or Sherrie White of South Bend Medical Foundation, (574) 234-4176 or (800) 544-0925.