



## PHOSPHOLIPID

### FUNCTION:

Phospholipids are a class of lipids that are a major component of all cell membranes. They play a role in the formation of lipid bilayers. Most phospholipids contain a diglyceride, a phosphate group, and a simple organic molecule such as choline.

### ANTIBODIES APPEAR:

Antiphospholipid Syndrome<sup>1 4</sup>  
 NIDDM<sup>7</sup>  
 Systemic Lupus Erythematosus<sup>3 6</sup>

### KNOWN CROSS-REACTIONS:

Anti-ribosomal P protein antibodies,<sup>1</sup> DNA,<sup>2</sup>  
 Cardiolipin<sup>2</sup>

### CLINICAL SIGNIFICANCE:

Antibodies against phospholipids may have an important role in mediating platelet destruction in autoimmune disorders. Anti-phospholipid antibodies (anti-PL) have been shown to bind to the membrane of activated platelets; thus it has been postulated that this may result in increased destruction of platelets by the reticuloendothelial system.<sup>3</sup> Anti-PL have been demonstrated in patients with autoimmune thrombocytopenia (AITP) and Systemic lupus erythematosus (SLE).<sup>3</sup> Anti-PL are directed against a diverse group of phospholipids and phospholipid-binding proteins; among these, anti-cardiolipin (anti-CL), anti-beta-2-glycoprotein I (β2-GP-I) and anti-prothrombin antibodies seem to be the most relevant from the clinical viewpoint.<sup>1</sup> Anti-PL have been found in moderate and severe noninsulin-dependent diabetes mellitus patients, and thus may suggest that autoimmune nerve destruction may be involved in diabetic neuropathy in NIDDM patients.<sup>7</sup> Anti-phospholipid antibody syndrome may appear as a stand-alone syndrome or associated with major connective tissue disease such as SLE and may manifest in a number of neurological conditions.<sup>1</sup> Widespread thrombosis and infarction of placentas obtained from women with antiphospholipid syndrome (APS) was actually reported both in first and second trimester abortions.<sup>4</sup> There is evidence from in vitro studies that anti-PL may induce pro-coagulant state at the placental level, thus playing a pathogenic role of thrombotic events in anti-PL-associated pregnancy.<sup>4</sup> It can be concluded that impaired endothelial fibrinolysis is a potential prothrombotic mechanism in subjects with antiphospholipid antibodies.<sup>5</sup>

### References:

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3. Lipp E, et al. Antibodies against platelet glycoproteins and antiphospholipid antibodies in autoimmune thrombocytopenia. *Eur J Haematol*, 1998; 60:283-288.
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5. Patterson AM, et al. The influence of anti-endothelial/antiphospholipid antibodies on fibrin formation and lysis on endothelial cells. *Br J Haematol*, 2006; 133:323-330.
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7. Shigeta H, et al. Serum Autoantibodies Against Sulfatide and Phospholipid in NIDDM Patients With Diabetic Neuropathy. *Diabetes Care*, 1997; 20(12): 1896-1899.