A biotin-containing phospholipid vesicle layer is used for surface resonance plasmon (SPR) biosensing.

When a suspension of vesicle composed of 1,2-dioleoyl-sn-glycero-3-phosphocholine (DOPC) and a biotinylated phospholipid is applied on a self-assembled monolayer (SAM) deposited on a gold-coated SPR sensor chip, the layer of the phospholipid vesicle (phospholipid vesicle layer) forms on the surface.

The vesicle layer can immobilize a biotinylated protein A through the biotin-avidin-biotin linkage. Furthermore, immunoglobulin G (IgG) can bind to the protein A immobilized on the vesicle layer. Because these reactions are designed to take place on the gold surface, the protein immobilization based on the biotin-containing phospholipid vesicle layer is a useful technique for SPR biosensing.