

POS-PVA (POLYSILOXANE-POLYVINYL ALCOHOL) DISCS: A NEW COMPATIBLE POLYMER FOR IMMOBILIZATION OF IMMUNOLOGIC BIOMOLECULES

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Our laboratories developed an easy and efficient method to prepare a semi-interpenetrated polymer network based on polysiloxane and polyvinyl alcohol composite, named POS-PVA disc, through the alkoxide sol-gel process and was tested as solid-phase in immunoassays. Firstly, POS-PVA presented a maximum protein (human albumin) loading capacity of approximately 210µg/disc. Under those conditions, ELISA using POS-PVA discs showed to be applicable to human proteins detection. To investigate its efficacy were designed two analysis models: POS-PVA-antigen (Antigen obtained from *Trypanosoma cruzi*) and POS-PVA-antibody (human IgG anti-S100 protein). Both (antigen and antibody) were covalently immobilized onto POS-PVA discs with glutaraldehyde and tested as immunosensor for sera analysis. These results demonstrated that POS-PVA composite could be used as matrix support to antigen and antibody covalent immobilization through simple steps. Our group showed that intact antibodies and antigen could be remaining active within a sol-gel-derived composite. Thus, it's easy synthesis and low cost are important advantages for possible routine applications in clinical analysis.

Keywords: POS-PVA discs, Polysiloxane-Polyvinyl Alcohol, Immobilization, Antigen, Antibody