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SYNTHESIS OF A BIOCONJUGATE USING Ag-BSA/PVP FLUORESCENT NANOCLUSTERS WITH ANTI-PSG1.

Hernández Minjares Cinthya Melissa^{1*}, Rodríguez González Claudia Alejandra¹, Olivas Armendáriz Imelda¹.

1 Instituto de Ingeniería y Tecnología, Universidad Autónoma de Ciudad Juárez, Av. del Charro no. 450 Nte. Col. Partido Romero, 32310, Ciudad Juárez, Chihuahua, México.

**Corresponding author e-mail: cinthyamhm4@gmail.com*

The current project aims to synthesize and conjugate nanoclusters with a silver core coated with BSA and PVP with anti-PSG1 to diagnose breast cancer, taking advantage of the fluorescence emitted by the nanoclusters to detect PSG1. Four anti-PSG1 conjugates were obtained, experimenting with three factors: the amount of EDC and sulfo-NHS cross-linkers; the BSA deactivation process, and the conjugation time. The conjugate size relationship was performed concerning the BSA deactivation method. The increase in the number of cross-linkers and the time may lead to the dissociation of the NC, not achieving conjugation. By fluorescence spectroscopy, the emission's relationship with the conjugate's size was verified. The FTIR test suggests obtaining the conjugate due to peak shifts. The UV-Vis analysis shows the characteristic absorption bands of the crosslinking reagents, the BSA, and the distinctive absorption bands of the silver nanoclusters. The polyacrylamide gel electrophoresis assay confirms the presence of the nanoclusters and the PSG1 antibody in the conjugate by a ratio of molecular weights. Conjugate 2 presented the best parameters that allowed for obtaining a more promising conjugate than the other parameters.

Key Words: Nanocluster, fluorescence, bioconjugate.