

IMMOBILIZATION OF RECOMBINANT HUMAN ENDOSTATIN TO DIFFERENT SUPPORTS: POTENTIAL APPLICATIONS IN BIOMEDICINE

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The 20 kDa C-terminal fragment of collagen XVIII, endostatin, is a broad spectrum inhibitor of angiogenesis. It acts mainly suppressing endothelial cell proliferation and migration. This protein plays a potential role in several pathological disorders such as tumoral diseases, retinopathies or other non-neoplastic diseases, where the angiogenesis is crucial. However, the molecular mechanism of action of endostatin has not been yet established.

Protein immobilization is a widely used method in biochemical studies. Functionalized supports can be used not only as affinity chromatography matrices to study protein-protein interactions, but also as a tool for specific drug delivery. Taking into account the important role of endostatin in the angiogenic process, immobilization of this protein to different supports would be of interest for biomedical purposes.

In this work, a commercially available *rh*-endostatin from *Pichia pastoris* has been immobilized to agarose beads and magnetic nanoparticles. Moreover, the immobilization process has been optimized. Prior to the immobilization, post-translational modifications were analysed by MALDI-TOF/MS. Besides, in order to gain a deeper insight into the possible interactions established between supports and endostatin, a 3D model structure of the protein was elucidated by Bioinformatics tools.

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