البحث الثالث(بحث رقم ٣ فى قائمة الأبحاث محل تقييم اللجنة الموقرة)

Title	Wound dressing based on chitosan/ hyaluronan/ nonwoven fabrics:Preparation, characterization and medical applications
Authors	Rasha M. Abdel-Rahman, A.M. Abdel-Mohsen, R. Hrdina, L. Burgert, Z. Fohlerova, D. Pavliˇnák, **O.N. Sayed**, J. Jancar
Journal Information	*International Journal of Biological Macromolecules 89 (2016) 725–736*
ISSN	0141-8130
Impact factor	**3.671 (2016)**

Abstract:

Thin layers of chitosan (positively charged)/sodium hyaluronate (negatively charged)/nonwoven fabricswere constructed by polyelectrolyte multilayer pad-dry-cure technique. Pure chitosan (CS) was isolatedfrom shrimp shell and immobilized onto nonwoven fabrics (NWFs) using citric acid (CTA) as cross linkerand solvent agents through a pad-dry-cure method. The prepared thin layer of chitosan citrate/nonwovenfabrics (CSCTA/NWFs) were consequently impregnated with hyaluronan (CSCTA/HA/NWFs) in the sec-ond path through a pad-dry-cure method. Chitosan/hyaluronan/nonwoven fabrics wound dressing wascharacterized by different techniques such as FTIR-ATR, TGA and SEM. The antibacterial activity and thecytotoxicity of the dressing sheets were evaluated against Escherichia coli (E. coli) and Streptococcus aureus(S. aureus), mouse fibroblast (NIH-3T3) and keratinocytes (HaCaT) cell lines, respectively. The cell-fabricsinteraction was also investigated using fluorescence microscope, based on live/dead staining assay of 3T3cells. The healing properties of the new wound dressing were evaluated and compared with the control sample.