

Arindha Reni Pramesti, 2012. Absorbent Dressing Sponge Based Curcumined Alginate-Chitosan for Large-Medium Exudate Wound Level, this script under guidance Dyah Hikmawati, S.Si, M.Si. and Dr. Nanik Siti Aminah, M.Si, Department of Physics, Faculty of Science and Technology, Airlangga University.

ABSTRACT

It had been synthesized an absorbent dressing sponge made from alginate, chitosan, and curcumin. The method employed in this study was freeze dry technique for 24 hours at temperature of -80°C and continued drying in lyophilizer for 24 hours. The result is characterized by use of FTIR, absorb test with PBS solution (*Phospate Buffer Saline*) pH 7,4; moisture test with electronic moisture balance, and cytotoxicity test with MTT *assay*. In vivo test was carried out on mice for 3 days and made the histological preparation. Result of FT-IR data analysis showed the existence of alginate, chitosan, and curcumin absorbance, which was indicated by the emergence of typical absorbance band such as hydroxyl group (-OH) and primary amine (-NH₂) of chitosan, O-Na of alginate, and aromatic C=C of curcumin. Sponge which possess good absorption and unbroken when absorb PBS solution should compose from alginate:chitosan 1:2 in comparison, 0:4, and 1:4 with each absorption percentage 2547%, 2066%, and 1749% respectively. All of them also point out result non-toxic on MTT assay with cell percentage lives is more than 100%. The result of moisture test and observation of histopathological anatomy on alginate:chitosan sponge 0:4, 1:4, and 1:2 are consistent where the more moisture percentage the better reepithelialization and collagen density. High water content will moist the area around the wound, as a result it will fasten the process of wound healing. Alginate:chitosan sponge 0:4, 1:4, and 1:2 contained 42,9% , 32,7%, dan 20,4% moisture which the reepithelialization percentage is 100%, 100%, and 88% with level of the collagen density are very close, close, and medium density. Sponge with the ratio of 0:4 between alginate and chitosan has the potential to be used as an absorbent dressing sponge.

Key words: absorbent dressing sponge, alginate, chitosan, curcumin