FORMULASI DAN UJI AKTIVITAS SEDIAAN GEL PENYEMBUH LUKA TERBUKA INSISI DARI EKSTRAK DAUN MENGKUDU (*Morinda citrifolia* L.) DENGAN CMC-NA SEBAGAI *GELLING AGENT*

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INTISARI

Ekstrak daun mengkudu (*Morinda citrifolia* L.) diketahui memiliki kandungan senyawa kimia seperti flavonoid, alkaloid, dan triterpenoid yang merangsang proses penyembuhan luka. Aktivitas penyembuhan luka akan lebih efektif apabila diaplikasikan langsung pada tempat terjadinya luka, sehingga ekstrak daun mengkudu diformulasikan menjadi sediaan gel. Sifat fisik dan stabilitas fisik gel dipengaruhi oleh komposisi *gelling agent.* Penelitian ini bertujuan untuk melihat pengaruh *sodium carboxymethyl cellulose* (CMC-Na) sebagai *gelling agent* terhadap sifat fisik dan stabilitas fisik sediaan gel ekstrak daun mengkudu (*Morinda citrifolia* L.).

Penelitian ini menggunakan rancangan eksperimental murni. Pada formula dilakukan penambahan CMC-Na dengan variasi konsentrasi 2,5; 3; 3,5; 4% (b/b). Sifat fisik dan stabilitas fisik sediaan dilihat berdasarkan organoleptis, pH, viskositas, dan daya sebar selama penyimpanan 28 hari. Aktivitas penyembuh luka gel diukur berdasarkan pengurangan panjang luka yang dihasilkan. Data viskositas dan daya sebar dianalisis secara statistik menggunakan R 3.1.2 dengan taraf kepercayaan 95% untuk mencari pengaruh terhadap sifat fisik dan stabilitas fisik sediaan. Sediaan gel dengan konsentrasi CMC-Na 3% yang digunakan pada uji aktivitas penyembuh luka terbuka insisi.

Hasil penelitian menunjukkan CMC-Na memiliki efek signifikan terhadap viskositas dan daya sebar. Gel ekstrak daun mengkudu stabil secara organoleptis, pH, viskositas, dan daya sebar dalam penyimpanan 28 hari. Sediaan gel memiliki kemampuan menyembuhkan luka.

Kata kunci : CMC-Na, gel, ekstrak daun mengkudu, penyembuh luka

FORMULATION AND ACTIVITY TEST OF OPEN INCISION WOUND HEALING GEL PREPARATION FROM NONI LEAF EXTRACT (*MORINDA CITRIFOLIA* L.) WITH CMC-NA AS GELLING AGENT

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ABSTRACT

Noni leaf extract (Morinda citrifolia L.) known to contain chemical compounds such as flavonoids, alkaloids and triterpenoids that stimulate the wound healing process. Wound healing activity would be more effective when applied directly to the site of the wound, so that noni leaf extract was formulated into a gel formulation. The physical properties and physical stability of the gel is affected by the composition of the gelling agent. This study aims to observe the effect of sodium carboxymethyl cellulose (CMC-Na) as a gelling agent on the physical properties and physical stability of the noni leaf extract gel (Morinda citrifolia L.).

This research was used pure experimental design. CMC-Na was added in the gel formula with concentration variation 2,5; 3; 3,5; 4% (b/b). The physical properties and physical stability were tested by observe organoleptic, pH, viscosity, and spreadability during the 28 days storage. Wound-healing gel activity was measured based on the decreasing of how long the wound was made. The data viscosity and spreadability were analyzed statistically using R 3.1.2 with confidence level 95% to find out the influence towards the physical properties and physical stability. Noni leaves extract gel with 3 % concentration of CMC-Na was used to measured the open incision wound healing activity.

The result of this research showed that CMC-Na had the significant effect towards viscosity and spreadability. The gel extract of noni leaves were stable in organoleptic, pH, viscosity, and spreadability in the 28 days storage. The gel has ability to recover the incision wound.

Keyword: CMC-Na, gel, noni leaves extract, wound healing