

**DAFTAR PUSTAKA**

- Adil, P., Shah, D., Desai, T.R., Noolvi, M.N., 2016. Development and evaluation of chitosan and *Aloe vera* gel mucilage interpolymer complex-based mucoadhesive buccal films of tramadol hydrochloride, *Asian Journal of Pharmaceutical Sciences*, 2016(5), pp. 43–49.
- Ameliana, L., Dwiputri, H. R., and Nurahmanto, D., 2018 . Pengaruh propilen glikol dalam patch dispersi padat ketoprofen terhadap karakteristik fisika kimia dan laju penetrasinya (the effect of propylene glycol in solid dispersion patch of ketoprofen to the characteristic of chemical physics and in vitro penetration rate), *Pustaka kesehatan*, 6(2), pp. 230–234.
- Anward, G., Hidayat, Y., and Rokhati, N., 2013. Pengaruh konsentrasi serta penambahan gliserol terhadap karakteristik film alginat dan kitosan, 2(3), pp. 51–56.
- Ariyanti, N.K., Darmayasa, I.B.G., dan Sudiraga, S.K., 2012. Daya hambat ekstrak kulit daun lidah buaya terhadap pertumbuhan bakteri *Staphylococcus aureus* ATCC 25923 dan *Escherichia coli* ATCC 25922, **Jurnal Biologi**, Vol. 16(1), pp.1-4.
- Arzate-vázquez, I., Israel, C.P., Jose, J. C. D., Georgina, T. R., Eduardo, G. F., and Gustavo F., 2012. Microstructural characterization of chitosan and alginate films by microscopy techniques and texture image analysis, 87, pp. 289–299.
- Balau, L., Gabriela, L., Popa, M. I., Tura, V. and Melnig, V., 2004. Physico – chemical properties of Chitosan films, 2(4), pp. 638–647.
- Boateng, Joshua S ., Matthews, Kerr H ., Steven, Howard N.E., and Eccleston, G. M., 2007. Wound healing dressing and drug delivery system: a review, *Online*, 97.
- Bornare, S. S., Aher, S. S., and Saudagar, R. B., 2018. A review : film forming gel novel drug delivery system, 10(2).
- Bhuvaneshwari, S., Sruthi, D., and Sivasubramanian, V., 2011. Development and characterization of chitosan film, ***International Journal of Engineering Research and Applications (IJERA)***, 1(2), pp. 292–299.
- Chen, R. H., and Hwab, H., 1996. Effect of molecular weight of chitosan with the same degree of deacetylation on the thermal, mechanical, and permeability properties of the prepared membrane, 8617(96), pp. 353–358.

- Dai, T., Tanaka, M., Ying-Ying, H., and Hamblin, M. R., 2012. Chitosan preparations for wounds and burns: antimicrobial and wound-healing effects, 9(7), pp. 857–879.
- Mahandaru, D., and Dachlan, I., 2012. The effect of *Aloe vera* on healing process of incision wound, *Jurnal Plastik Rekonstruksi*, 1, pp. 82–87.
- Dhivya, S., Vijaya, V., and Santhini, E., 2015. Review article wound dressings – a review, 5(4), pp. 24–28.
- El-kamel, A. H., Ashri, L. Y., and Alsarra, I. A., 2007. Micromatrical metronidazole benzoate film as a local mucoadhesive delivery system for treatment of periodontal diseases, 8(3).
- Fehragucci, H., 2012. Pengaruh penambahan *plasticizer* dan kitosan terhadap karakter *edible film* Ca-alginat. *Skripsi*. Surakarta : Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Sebelas Maret.
- Ferdinandez, M. K., Ketut, I. A. D., and Made, I. D., 2013. Bioaktivitas ekstrak daun tapak dara (*Catharantus roseus*) terhadap kecepatan angiogenesis dalam proses penyembuhan luka pada tikus wistar, 2(2), pp. 180–190.
- Fernández-Pan, I. Ziani, K., Pedroza-Islas, R., Maté, J. I., 2010. Effect of drying conditions on the mechanical and barrier properties of films based on Chitosan, *Drying Technology*, 28(12), pp. 1350–1358.
- Fridayanti, A., Hendradi, E., and Isnaeni., 2010. Pengaruh kadar polietilen glikol (PEG) 400 terhadap pelepasan natrium diklofenak dari sediaan transdermal patch type matriks, 1(1), pp. 1–7.
- Goy, R. C., Britto, D. D., and Assis, O. B. G., 2009. A Review of the antimicrobial activity of chitosan, 19, pp. 241–247.
- Harsunu, B. T., 2008. Pengaruh konsentrasi *plasticizer* gliserol dan komposisi khitosan dalam zat pelarut terhadap sifat fisik edible film dari khitosan. *Skripsi*. Jakarta : Teknik Metalurgi dan Material. Fakultas Teknik. Universitas Indonesia.
- Hashemi, S. A., Madani, S. A., and Abediankenari, S., 2015. The review on properties of *Aloe vera* in healing of cutaneous wounds.
- Herliana, P., 2010. Potensi khitosan sebagai anti bakteri penyebab periodontitis, *Jurnal UI Untuk Bangsa Seri Kesehatan, Sains, dan Teknologi*, 1, pp. 12–24.

- Hoque, M. M., Rattila, S., Shishir, M. A., Bari, M.L., Inatsu, Y., and Kawamoto, S., 2012. Antibacterial activity of ethanol extract of betel leaf (*Piper betle L.*) against some food borne pathogens, *Bangladesh Journal of Microbiology*, 28(2), pp. 58–63.
- Imam, F., 2017. Pemanfaatan asetil d- glukosamin dari kulit udang (*Panaeus sp.*) Sebagai penjernih air limbah. *Skripsi*. Tanjung Pinang : Fakultas Ilmu Kelautan dan Perikanan Teknologi Hasil Perikanan. Universitas Maritim Raja Ali Haji.
- Jayakumar, R., Menon, D. M., K Nair, S. V., and Tamura, H., 2010. Biomedical applications of chitin and chitosan based nanomaterials — *A short review*, *Carbohydrate Polymers. Elsevier Ltd.*, 82(2), pp. 227–232.
- Jhawar, V., and Saini, V., 2013. Transdermal drug delivery systems: approaches and advancements in drug absorption through skin.
- Jongjareonrak, A., Benjakul, S., Visessanguan, W., and Tanaka, M., 2006. Effects of plasticizers on the properties of edible films from skin gelatin of bigeye snapper and brownstripe red snapper. *Eur. Food Res. Technol.*, 222, 229-235.
- Karki, A. S., Kim, H., Seon, N. J., Dohyun, S., Kanghee, J., and Jaehwi, L., 2016. Thin films as an emerging platform for drug delivery, *Asian Journal of Pharmaceutical Sciences. Elsevier B.V.*
- Kashinata., Singh., and Prashant, S. S., 2015. Design and evaluation of transdermal film of valsartan by using modified polymer design and evaluation of transdermal film of valsartan by using modified polymer.
- Kathe, K., and Kathpalia, H., 2017. Film forming systems for topical and transdermal drug delivery, *Asian Journal of Pharmaceutical Sciences. Elsevier B.V.*
- Kumar, D., Sairam, R., Anandbabu, S., Karpagavalli, L., Maheswaran, A., Narayanan, N., 2012. Formulation and evaluation of transdermal patches of salbutamol, *Research Journal of Pharmaceutical , Biological and Chemical Sciences*, 3(3), pp. 1132–1139.
- Lal, J., Gupta, S. K., and Agarwal, D. D., 2012. Chitosan : an efficient biodegradable and recyclable green catalyst for one-pot synthesis of 3 , 4-dihydropyrimidinones of curcumin in aqueous media, *CATCOM. Elsevier B.V.*, 27, pp. 38–43.
- Lim, Z. X., and Cheong, K. Y., 2015. Switching characteristics of natural *Aloe vera*-based memory devices effects of drying temperature and ethanol, *Physical Chemistry Chemical Physics*. Royal Society of Chemistry, 17(November), pp. 26833–26853.

- Masamba, K., Lie, Y., Hategekimana, J., and Liu, F., 2016. Effect of type of *plasticizers* on mechanical and water barrier properties of transglutaminase cross-linked zein-oleic acid composite films, *International Journal of Food Engineering*, 12(4), pp. 365–376.
- Menda, J. P., Reddy, T., Deepika, R M., Pandima, D., and Sastry, T P., 2014. Preparation and characterization of wound healing composites of chitosan, *Aloe vera* and *Calendula officinalis* – a comparative study, *American Journal of Phytomedicine and Clinical Therapeutics*.
- Miranda, M., Pratama, Y., and Hintono, A., 2018. Karakteristik edible film *Aloe vera* dengan emulsi extra virgin olive oil dan kitosan, 38(4), pp. 381–387.
- Monica Novyana, R., and Susanti., 2016. Lidah buaya (*Aloe vera*) untuk penyembuhan luka, Universitas Lampung, 5, pp. 149–153.
- Nadarajah, K., 2005. Development and characterization of antimicrobial edible films from crawfish chitosan.
- Nafiyanto, I., 2019. Pembuatan plastik biodegradable dari limbah bonggol pisang kepok dengan *plasticizer* gliserol dari minyak jelantah dan komposit kitosan dari limbah cangkang bekicot (*Achatina fullica*), *Integrated Lab Journal*, 07, pp. 75–89.
- Nurmesa, A., dan Najihudin, A., 2019. Formulasi dan evaluasi stabilitas fisik patch transdermal alkaloid nikotin daun tembakau (*Nicotiana tobacum Linn*) dengan variasi polimer dan asam oleat, *Jurnal Penelitian Farmasi Herbal*, 2(1), pp. 1–8.
- Patel, H., Bhimani, B., and Patel, G., 2012. Transdermal drug delivery system as prominent dosage forms for the highly lipophilic drugs , *Review Article International Journal Of Pharmaceutical Research And Bio-Science A Path For Horizing Your Innovative Work* . 1(3).
- Pathan, I. B., and Setty, C. M., 2009. Chemical penetration enhancers for transdermal drug delivery systems, *Tropical Journal of Pharmaceutical Research*, 8(2), pp. 173–179.
- Permanasari, A. R., Saripudin, S., Saputra, Tri Reksa., dan Fahmi, M., 2019. Pembuatan serbuk *Aloe vera* sebagai bahan baku kosmetik masker wajah menggunakan metode vacuum drying, *Teknik Kimia dan Lingkungan*, 3(2), pp. 62–70.
- Prajapati, S. T., Patel, C. G., and Patel, C. N., 2011. Formulation and evaluation of transdermal patch of repaglinide.

- Pubchem. 2020. <https://pubchem.ncbi.nlm.nih.gov/compound/Chitosan>. Diakses pada tanggal 27 Juli 2020.
- Purnama, H., dan Ratnawulan, S., 2017. Review sistematik: proses penyembuhan dan perawatan luka, 15, pp. 251–258.
- Puspita, B. S., dan Damaiyanti, D. W., 2016. Perbedaan pengaruh pemberian kitosan berat molekul tinggi dan rendah terhadap jumlah pembuluh darah pada proses penyembuhan luka pencabutan gigi (*The difference effect of high and low molecular weight chitosan to the amount of blood vessel in wound healing*), (031), pp. 1–5.
- Puspongoro AD., 2005. Luka. Dalam: Sjamsuhidajat R, De Jong W, penyunting. Buku Ajar Ilmu Bedah. Edisi ke-2. Jakarta: EGC.
- Rabea, E. I., Stevens, C. V. S., and Walter, G. S., 2003. Chitosan as antimicrobial agent: applications and mode of action, 4(6).
- Rafieian, S., Mahdavi, H. and Masoumi, M. E., 2019. Improved mechanical, physical and biological properties of chitosan films using *Aloe vera* and electrospun PVA nanofibers for wound dressing applications, *Journal of Industrial Textiles*.
- Rahman, M. A., 2012. Kitosan sebagai bahan antibakteri alternatif dalam formulasi gel pembersih tangan (*hand sanitizer*). *Skripsi*. Bogor ; Teknologi Hasil Perairan. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor.
- Rowe, R. C., Sheskey, P. J., and Owen, S. C., 2009. Handbook of Pharmaceutical Excipients Sixth Edition, Pharmaceutical Press, London.
- Sayare, A. S., Pithe, A. G., Prashant, D., and Khandelwal, K. R., 2019. Formulation and evaluation of gabapentin loaded chitosan transdermal films, 11(8), pp. 2872–2877.
- Setiani, W., Sudiarti, T., and Rahmidar, L., 2013. Preparasi dan karakterisasi edible film dari poliblend pati sukun-kitosan, 3(2)
- Sezer, A. D., Hatipoglu, F., Cevher, E., Ogurtan, Z., Bas, A. L., and Akbuga, J., 2007. Chitosan film containing fucoidan as a wound dressing for dermal burn healing: Preparation and in vitro/in vivo evaluation, *AAPS PharmSciTech*, 8(2), pp. 1–8.
- Shi, L., and Tang, Z. 2009. Adsorption of nuclease P1 on chitosan nanoparticles, *Brazilian Journal of Chemical Engineering*, 26(02), pp. 435–443.

- Silva, S. S., Popa, E.G., Gomes, M.E., Cerqueira, M., Marques, A.P., Caridade, S.G., Teixeira, P., Sousa, C., Mano, J.F., Reis, R.L., 2013. An investigation of the potential application of chitosan / aloe-based membranes for regenerative medicine, *Acta Biomaterialia*.
- Silvia, R., Waryani, S. W., and Hanum, F., 2014. Pemanfaatan kitosan dari cangkang rajungan (*Portonius sanguinolentus L.*) sebagai pengawet ikan kembung (*Rastrelliger Sp*) dan ikan lele (*Clarias batrachus*), 3(4), Pp. 18–24.
- Singh, T. P., Chatli, M. K. and Sahoo, J. ,2015. Development of chitosan based edible films : process optimization using response surface methodology, pp. 2530–2543.
- Srinivasa, P., Baskaran, R., Ramesh, M., Prashanth, K., Harish, R., and Tharanathan., 2002. Storage studies of mango packed using biodegradable chitosan film, *European Food Research and Technology*, 215(6), pp. 504–508.
- Suderman, N., Isa, M. I. N., and Sarbon, N. M., 2018. Food bioscience the effect of plasticizers on the functional properties of biodegradable gelatin-based film : A review , pp. 111–119.
- Sugiaman, V. K., 2011. Peningkatan penyembuhan luka di mukosa oral melalui pemberian *Aloe vera* ( Linn.) secara topikal, *JKM*, 11, pp. 70–79.
- Thakur, G., Singh, A., and Singh, I., 2016. Formulation and evaluation of transdermal composite films of chitosan-montmorillonite for the delivery of curcumin, *International Journal of Pharmaceutical Investigation*, 6(1), pp. 23–31.
- Viji, C. S., Trikkurmadom, S. A., Rajalekshmi, G., and Pandimadevi, M., 2015. Potential wound healing materials from the natural polymers -a review, *International Journal Of Pharma And Bio Sciences Issn*, 6(3), Pp. 1365–1389.
- Vieira, M. G. A., Da Silva, M. A., Dos Santos, L. O., and Beppu, M.M., 2011. Natural-based plasticizers and biopolymer films: A review, *European Polymer Journal*. Elsevier Ltd, 47(3), pp. 254–263.
- Wardono, A. P., Pramono, B. H., Afrian, R., and Husein, J., 2012. Pengaruh kitosan secara topikal terhadap penyembuhan luka bakar kimiawi pada kulit *Rattus norvegicus* (*The influence of topical chitosan on chemical burn healing in skin rattus norvegicus*), 12(3), pp. 177–187.

- Wimardani, Y., Suniarti, S., Fatma, D., Freisleben, H. J., Wanandi, S. I., and Ikeda, M. A., 2012. Cytotoxic effects of chitosan against oral cancer cell lines is molecular-weight- dependent and cell-type-specific, (6), pp. 1–10.
- Yadav, A. V., and Urade, M. N.. 2019. Formulation and evaluation of chitosan based transdermal patches of lornoxicam for prolonged drug release and to study the effect of permeation enhancer, 53(1).
- Yakin, A. P., 2015. Pengaruh pemberian sediaan gel penyembuh luka pada tikus jantan galur wistar dengan kombinasi zat aktif kitosan dari limbah kulit udang windu (*Peneaus monodon*) dan ekstrak kulit manggis. *Skripsi*. Yogyakarta : Fakultas Farmasi. Universitas Sanata Dharma.
- Yulia, R., 2018. Pengaruh konsentrasi *Aloe vera* terhadap karakteristik fisik dan aktivitas wound healing sediaan spray gel kitosan-*Aloe vera*. *Skripsi*. Surabaya.Fakkultas Farmasi Universitas Airlangga.
- Zuhairiah, N., Agusnar, H., dan Alfian, Z. B. W., 2013. Pengaruh viskositas kitosan dari berbagai berat molekul terhadap pembuatan kitosan nanopartikel menggunakan ultrasonic bath, 2 (November), pp. 68–79.