

## DAFTAR PUSTAKA

- Adam Z. A., Lee Y. S., Mohamed R., 2017. *Pharmacological properties of agarwood tea derived from Aquilaria (Thymelaeaceae) leaves: an emerging contemporary herbal drink.* <https://doi.org/10.1016/j.hermed.2017.06.002>
- Ansel H. C., & Allen, L., V., 2014. *Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems*. Tenth Edition. Medical Book Publisher EGC, Philadelphia: 343 – 344.
- Ansel, H. C., Allen, L.V., dan Popovich, N.G., 2011. *Pharmaceutical Dosage Forms and Drug Delivery System*. Ninth Edition. Pharmaceutical Press and American, London
- Arun Raj, R., 2014. *Formulation evaluation and in vitro permeation studies of transdermal nifedipine from matrix type patches', International Journal of Pharmacy and Pharmaceutical Sciences*, 6(1), pp. 185–188
- Asadi S.,Y., Parsei P., Karimi M., Ezzati S., Zamiri A., Mohammadzadeh F., Kopaei M.R., 2013. *Effect of green tea (Cammelia sinensis) extract on healing process of surgical wounds in rat.* Int J Surg; Surg 11 (4): 332 – 7
- Akhtar N., Mahmood T., Khan B.A., Khan H.M.S. and Saeed T., 2011. *Depigmenting and Anti Erythematic Effects of 3% Green Tea Emulsion, HealthMed*, 5(5), 1165 – 1169
- Ary, Bandem W., Waskito F., 2006. *Berbagai Pengawet Kosmetik Sebagai Penyebab Dermatitis Kontak Alergi*, Dexa Media, Vol 19 No, 2.
- Ahmad, A.R., Dahlia, A.A. dan Kosman, R. 2014. *Standardization of Simplisia and Methanolic of Cempa (Acacia rugata Lam.) Fawc. Rendle) Leaves Endemic Plant From Massenrepulu Regency of Enrekang. World Journal of Pharmaceutical Science* 2: 1809.
- Araghizadeh, A., Kohanteb, J., dan Fani, M.M. 2013. *Inhibitory Activity of Green Tea (Camellia sinensis) Extract on Some Clinically Isolated Cariogenic and Periodontopathic Bacteria.* Medical Principles and Practice.22:368-372
- Badan POM Republik Indonesia, 2013. *Pedoman Teknologi Formulasi Sediaan Berbasis Ekstrak*, Vol 2, Badan POM RI, Jakarta, pp.5

- Badan POM Republik Indonesia. 2010. Teh hijau (*Camellia sinensis* L.). *Serial Data Ilmiah Terkini Tumbuhan Obat*. Hal. 64 – 67
- Benson, H. A. E., Watkinson, A. C., 2012. *Topical and Transdermal Drug Delivery : Principles and Practice*, A John Wiley & Sons Inc. Publication, New Jersey, pp. 3-39, 85-105, 183-270
- Carrer V, Alonso C, Pont M, Zanuy M, Córdoba M, Espinosa S, *et al.* 2020. *Effect of propylene glycol on the skin penetration of drugs*. *Arch Dermatol Res* [Internet] ;312(5) : 337–52. Available from: <https://doi.org/10.1007/s00403-019-02017-5>
- Chandira R. M., Pradeep, Pasupathi A., Bhowmik D., Chiranjib, Jayakar B., Tripathi K. K., K. P. Sampath Kumar K. P., 2010. *Design Development and Formulation of Antiacne Dermatological Gel*. *Journal of Chemical and Pharmaceutical Research*, 2(1), pp. 401 – 414.
- Djuanda A., Hamzah M., dan Aisah, S. 2010. *Ilmu Penyakit Kulit dan Kelamin*. Fakultas Kedokteran Universitas Indonesia : Jakarta
- Evitasari, D., Susanti E., 2021. Kadar Polifenol Total Teh Hijau (*Camellia sinensis*) Hasil Maserasi dengan Perbandingan Pelarut Etanol – Air. *Pharmademica: Jurnal Kefarmasian dan Gizi* Vol.1 (1): 16 - 23.
- Endarini H.L., 2021. Rendemen dan Skrining Fitokimia Ekstrak Daun Teh Hijau (*Camellia sinensis* L.). *Poltekkes Kemenkes Surabaya* : Vol 11 (2)
- En, Hyung Chang, Joanne Huang, Zixiang Lin, Angela C. Brown, 2018. *Catechin-Mediated Restructuring of a Bacterial Toxin Inhibits Activity*. *Bbagen*. <https://doi.org/10.1016/j.bbagen.2018.10.011>
- Departemen Kesehatan Republik Indonesia. 1978. *Formularium Nasional*, Edisi II; Jakarta
- Garg T., Singh S., Arora S., and Murthy R., 2012. *Scaffold: a novel carrier for cell and drug delivery*. *Crit Rev The Drug Carrier Syst*. 29 (1) 1–63, <https://doi.org/10.1615/critrevtherdrugcarriersyst.v29.i1.10>
- Garg T., Singh S., and Goyal A.K., 2013. *Stimuli-sensitive hydrogels: an excellent carrier for drug and cell delivery*. *Crit Rev Ther Drug Carrier Syst*. 30:369 – 409  
DOI: 10.1615/CritRevTherDrugCarrierSyst.20130072

- Genatrika, E., Nurhikmah, I. dan Hapsari, I. 2016. Formulasi Sediaan Krim Minyak Jintan Hitam (*Nigella sativa* L.) Sebagai Anti Jerawat terhadap 71 Bakteri *Propionibacterium acnes*. PHARMACY ISSN 1693-3591, 13(02), hal. 192–201.
- Harborne, J.B., 1987. *Metode Fitokimia: Penuntun Cara Modern Menganalisa Tumbuhan*. Terbitan Kedua. Terjemahan oleh Kosasih Padmawinata, K. dan Soediro, I. Bandung: ITB
- Hariningsih, Y., 2019. Pengaruh Variasi Konsentrasi Na-CMC Terhadap Stabilitas Fisik Gel Ekstrak Pelepah Pisang Ambon (*Musa paradisiaca* L.). *Jurnal Ilmiah Farmasi*, 8 (2), 46-51.
- Indriani, S., 2006. Aktivitas Antioksidan Ekstrak Daun Jambu Biji (*Psidium guajava* L.), *Jurnal Ilmu Pertanian Indonesia*. 11(1): 13 – 17.
- Kementerian Kesehatan Republik Indonesia. 2017. *Farmakope Herbal Indonesia*. Edisi II, Jakarta
- Kaur D., Singh, R. 2015. A novel approach: *Transdermal gel*. *International Journal of Pharma Research & Review*, 4(10), 41 – 50
- K. Srinivas, J.W King, LR. Howard, J.K Monrad, 2010. *Solubility of gallic acid, catechin, protocatechuic acid in subcritical water from (298.75 to 415.85) K*, *American Chemical Society* Vol 55
- Koech K. R., Wachira F. N., Ngure R. M., 2013. *Antimicrobial, synergistic and antioxidant activities of tea polyphenols*. *Formatex*. 2013; 2 (4) : 971 – 81.
- Lanting, Zeng, Xiaochen, Zhou, Yinyin Liao, Ziyin Yan, 2020. *Roles of specialized metabolites in biological function and environmental adaptability of tea plant (Camellia sinensis) as a metabolite studying model*. *Journal Of Advanced Research. University of Chinese Academy of Sciences, China* Vol.19. <https://doi.org/10.1016/j.jare.2020.11.004>
- Marchese A., Coppo E., Anatoly P., Sobolev., Rossi D., Mannina L., Daglia M., 2014. *Influence of in vitro simulated gastroduodenal digestion on the antibacterial activity, metabolic profiling and polyphenols content of green tea (Camellia sinensis)*. *Food Research International* Vol 6, <https://doi.org/10.1016/j.foodres.2014.01.036>
- Mardikasari S. A., Jufri M., Djajadisastra J., 2016. Formulasi dan Uji Penetrasi *In Vitro* Sediaan Topikal Nanoemulsi Genistein dari

Tanaman *Sophora japonica* Linn. Jurnal Ilmu Kefarmasian Indonesia. Vol. 14 No. 2: 190-198, <http://jifi.farmasi.univpancasila.ac.id/index.php/jifi/article/view/30>

- Mahmood, T., Akhtar, N., Khan, B. A., Khan, H. M. S., dan Saeed, T., 2010. *Outcomes of 3% green tea emulsion on skin sebum production in male volunteers*. Bosn. J. Basic Med. Sci. Udruzenje Basicnih Med. Znan. Assoc. Basic Med. Sci., 10(3), 260–264
- Mali, A. D., Bathe, R., dan Patil M. 2015. Review Article : An updated review on transdermal drug delivery systems. Int. J. Adv. Sci. Res. Vol. 1(06): 244-254, <http://dx.doi.org/10.7439/ijasar>
- Melok, AL., Lee, LH., Yussof Mohamed, SA., Chu, T. 2018. *Green tea polyphenol epigallocatechin-3-gallate-stearate inhibits the growth of Streptococcus mutans: a promising new approach in caries prevention*. Dentistry journal
- M.T. Soe, T. Pongjanyakul, E. Limpongsa, N. Jaipakdee. 2020. *Modified glutinous rice starch-chitosan composite films for buccal delivery of hydrophilic drug*, Carbohydr. Polym. 245. <https://doi.org/10.1016/j.carbpol.2020.116556>, 116556.
- Misna, M & Diana K., 2016. Aktifitas antibakteri kulit bawang merah (*Allium cepa* L.) terhadap *S. aureus*. Galenika Journal of Pharmacy, 2(2) : 138 – 144.
- Mulyono, H. A. M. 2006. *Membuat Reagen Kimia di Laboratorium*. Bumi Aksara. Jakarta.
- Muljono, P., Fatimawali F. & Manampiring A. E. 2016. Uji aktivitas antibakteri ekstrak daun mayana jantan *Coleus atropurpureus* (Benth) terhadap pertumbuhan bakteri *Streptococcus Sp.* Dan *Pseudomonas Sp.* Jurnal ebiomedik(eBm) 4 (1): 164 – 172
- Mutiasari, Rini I., 2012. Uji Aktivitas Antioksidan Ekstrak Jamur dengan Metode DPPH dan Identifikasi Golongan Senyawa Kimia dari Fraksi Teraktif. Universitas Indonesia; Depok
- Ningrum, A. A., 2011. Faktor Faktor yang mempengaruhi pembentukan emulsi di antaranya, suhu, waktu pengadukan dan kecepatan pengadukan, skripsi, sarjana, Universitas Sanata dharma
- Program Sarjana Universitas Sanata Dharma. 2011. *Faktor Faktor yang mempengaruhi pembentukan emulsi di antaranya, suhu, waktu pengadukan dan kecepatan*. Yogyakarta.

- Pasrija D, Anandharamakrishnan C. 2015. *Techniques for Extraction of Green Tea Polyphenols: A Review*. Food Bioprocess Technol. Institute Mysore India; Volume 8 (5) : 935–50
- Program Studi Sarjana Universitas Hasanuddin. 2018. *Efek ekstrak teh hijau (Camellia sinensis L.) dalam memodulasi aktivitas amoksisilin terhadap bakteri Staphylococcus aureus*. Fakultas Farmasi. Makassar
- Paramita, N.L.P.V., Andari, N.M.D., Andani. 2020. Penetapan kadar fenol total dan katekin daun I hitam dan ekstrak aseton teh hitam dari tanaman *Cammelia sinensis* Var Assamica. Universitas Udayana; Jimbaran-Bali. 14 (1) 43 – 5
- Patil U.K, and Saraogi R., 2014. *Natural products as potential drug permeation enhancer in transdermal drug delivery system*. Archives Dermato Research. 306 (5) : 419 – 426, <https://doi.org/10.1007/s00403-014-1445-y>
- Widaty S., Soebono H., Nilasari H., Listiawan Y. M., Siswati A.S. 2017. *Panduan Praktek Klinis Bagi Dokter Spesialis Kulit Dan Kelamin Di Indonesia*; Jakarta
- Permana, A. D., 2020. Phytosomal nanocarriers as platforms for improved delivery of natural antioxidant and photoprotective compounds in propolis: An approach for enhanced both dissolution behaviour in biorelevant media and skin retention profiles', *Journal of Photochemistry and Photobiology B: Biology*. Elsevier, 205(March), p. 111846. <https://doi.org/10.1016/j.jphotobiol.2020.111846>
- Pratiwi D. 2008. *Uji Efek Antiinflamasi Topikal Ekstrak Etanol Daun Jambu Biji (Psidium guajava Linn.) pada Edema Kulit Punggung Mencit Galur swiss Terinduksi Karagenin*. Skripsi. Yogyakarta: Fakultas Farmasi. Universitas Sanata Dharma
- Ramadon D., Pramesti S.S., Anwar E., 2017. *Formulation stability test and in vitro penetration study of transethosomal gel containing green tea (Cammelia sinensis L.) leaves extract*. Laboratory of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, Universitas Indonesia; Depok, West Java, Indonesia. Int J App Pharm, Vol 9, Issue 5, 2017, 91 – 96

- Ramteke, K.H., Dhole S.N., dan Patil S.V. 2012. *Transdermal Drug Delivery System A Review. Journal of Advanced Scientific Research.* 3 (1): 22-35.
- Reygaer W. C., 2014. *The antimicrobial possibilities of green tea.* Front Microbiol. Department of Biomedical Sciences, Oakland University William Beaumont School of Medicine, Rochester, MI, USA
- Raaman, N. 2006. *Phytochemical Techniques.* New India Publishing: New Delhi
- Rini S., Iskandarsyah, Djadjadisastra J., 2015. Formulasi dan Uji Penetrasi *In Vitro* Sediaan Gel Transfersom Mengandung Kofein sebagai Antiselulit. Universitas Indonesia; Jakarta. Vol 13 No 2
- Rowe, R. C., Sheskey, P.J., dan Quinn, M.E., 2009. *Handbook of Pharmaceutical Excipients, 6 th edition, Pharmaceutical Press an American Pharmacist Association 2009, Washington D.C., pp. 110 – 112.*
- Shah H, Jain A, Laghate G, Prabhudesai D. 2020. *Pharmaceutical excipients.* Remingt Sci Pract Pharm. 633 – 43.
- Sayuti N. A., 2015. Formulasi dan Uji Stabilitas Fisik Sediaan Gel Ekstrak Daun Ketepeng Cina (*Cassia alata* L.). Politeknik kesehatan kemenkes; Surakarta, Vol 5 (2), 74 – 78
- Sartini, Rahmasia, Marzuki A. 2019. Pengaruh bahan tambahan maldoxterin dan gom arab terhadap kadar polifenol dari ekstrak teh hijau (*Cammelia sinensis*) setelah penyimpanan. Fakultas Farmasi, Universitas Hasanuddin, Makassar; MFF 2019: 23 (1) : 21 – 24.
- Sartini, Fajriani, Hamudeng A. M. 2015. Antibacterial Activity of Ethanolic Extract of Green Tea (*Camellia sinensis* L.) and Its Toothpaste Products Against *Streptococcus mutans* and *Lactobacillus acidophilus*. [\*Asian Journal of Microbiology, Biotechnology and Environmental Sciences.\* 17\(4\):879-882](#)
- Saeed M., Naveed M., Arif M., Kakar M. U., Manzoor R., 2017. *Green tea (Camellia sinensis) and L-theanine: Medicinal values and beneficial applications in humans—A comprehensive review.* Vol :1260 – 1275. <http://dx.doi.org/10.1016/j.biopha.2017.09.024>

- Septiani S., 2012. Formulasi sediaan masker gel antioksidan dari ekstrak etanol biji melinjo (*Gnetum gnemon* Linn.). *Students e-Journal*, 1(1), 39.
- Senanayake N., 2013. *Green tea extract: Chemistry, antioxidant properties and food applications-a review*. *J Funct Foods*. Elsevier Ltd. 2013: 5 (4) : 1529 – 41.
- Stinchom, A.L., and Banks, S.L. 2010. *Formulation of Cannabidiol and Prodrugs of Cannabidiol and Methods of Using The Same*, Patens Application, Alltranz Inc., Lexington, KY, 5 – 30.
- Sutarna T. H., Ngadeni A., Anggiani R. 2013. Formulasi Sediaan Masker Gel dari teh Hijau (*Cammelia sinensis* L.) dan madu hitam (*Apis dorsata*) Sebagai Antioksidan. Fakultas Farmasi, Universitas Jenderal Achmad Yani Cimahi, Indonesia. Vol 1 (1), 17-23, <http://dx.doi.org/10.26874/kjif.v1i1.23>
- Sugihartini, N., Fudholi, A., Pramono, S., dan Sismindari. 2011. *Optimization Composition of Oleic Acid, Propylene glycol, and Volatile Oil of Curcuma xanthorrhiza as Enhancer of Transport of Epigallocatechin Gallat in Green Tea Extract with Simplex Lattice Design Methode*. *Jurnal Bahan Alam Indonesia*, 7 (7), 393–395
- Taylor, P.W., Hamilton-Miller, J.M., Stapleton, P.D. 2005. *Antimicrobial Properties of Green Tea Catechins*. *Food Sci Technol Bull*.2:71-81
- Vadas E. B., 2010. *Stability of Pharmaceutical Products. The Science and Practice of Pharmacy* Vol. 1 : 988 – 989.
- Verawaty, Halim A., Febriyanti, 2016. Efektivitas system penghantaran liposom pada katekin sebagai antioksidan. Fakultas Farmasi Universitas Andalas; Padang. Vol 2 (2) 176–182, <https://doi.org/10.29208/jsfk.2016.2.2.85>
- Williams, A.C., Barry, B.W., 2012. *Penetration enhancers. Advanced Drug Delivery Reviews*, 64(), 128–137. doi:10.1016/j.addr.2012.09.032
- Widaty S., Soebono H., Nilasari H., Listiawan Y. M., Siswati A.S. 2017. *Panduan Praktek Klinis Bagi Dokter Spesialis Kulit Dan Kelamin Di Indonesia*; Jakarta
- Widyaningrum N., Fuholi A., Sudarsono, Setyowati E.P., 2015. *The Stability of Epigallocatechin Gallate (EGCG) from Green Tea*



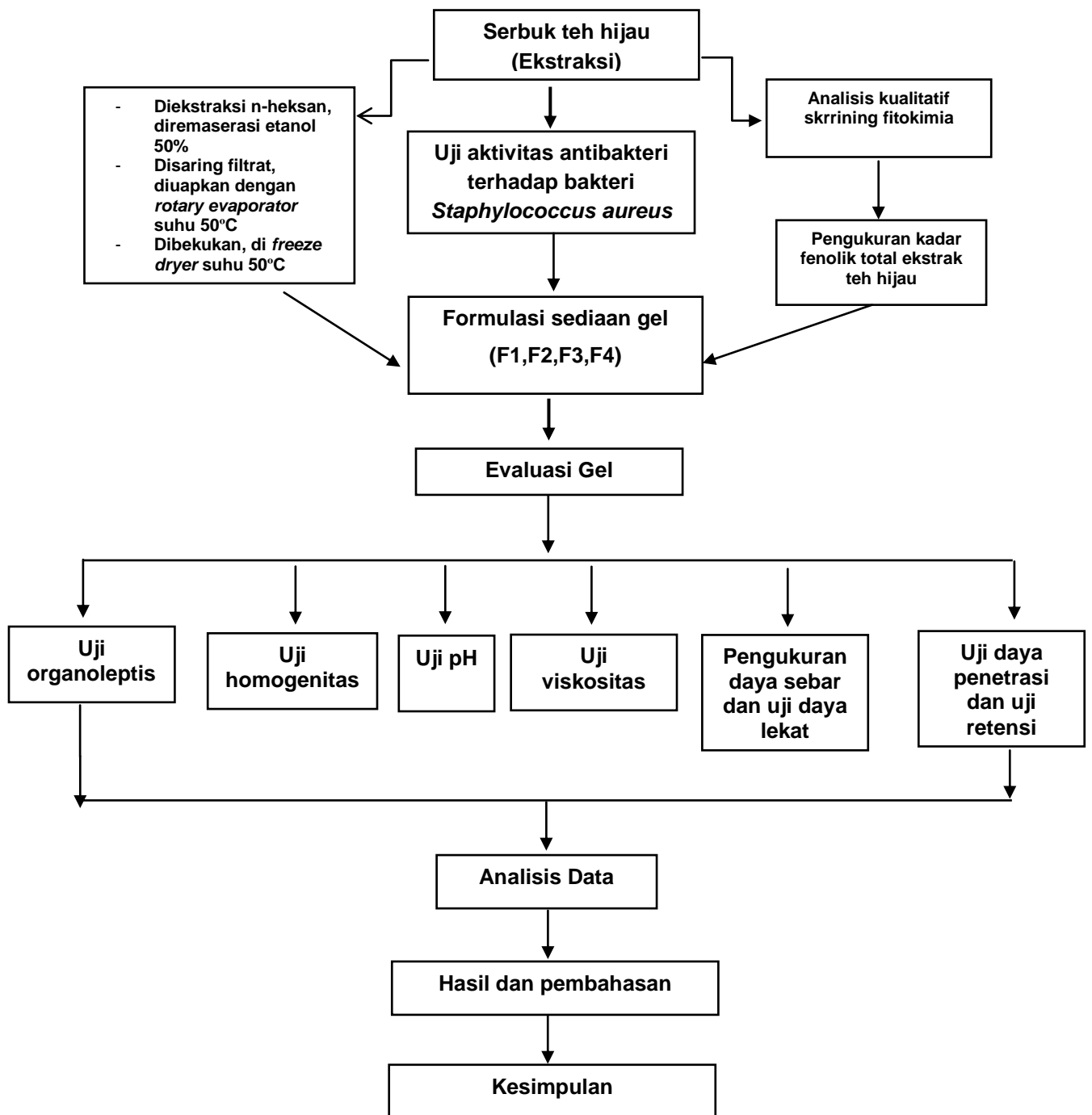
*(Camellia sinensis)* and its Antibacterial Activity against *Staphylococcus epidermidis* ATCC 35984 and *Propionibacterium acnes* ATCC 6919, *Asian. J. of Biol. Sci.*, 8(2), 93 – 101

- Widyaningrum N., Fuholi A, Sudarsono, Setyowati EP, 2015. *The Effect of Altitude Against Total Phenolic and Epigallocatechin Gallate (EGCG) Content in Green Tea Leaf, International Convergence on science and science education.* Vol. 34 – 40
- Widyaningrum, N., 2009. Pengaruh Variasi Konsentrasi Ekstrak Etanolik Daun Teh Hijau (*Camelia Sinensis* L.) Dalam Sediaan Krim terhadap Sifat Fisik dan Aktivitas Antibakterinya, Fakultas Farmasi Universitas Gadjah Mada: Yogyakarta. Vol 26 – 32.
- Winkanda P.S., 2015. *Kitab Herbal Nusantara: Aneka Resep & Ramuan Tanaman Obat Untuk Berbagai Gangguan Kesehatan, Teh (Cammelia sinensis)*; Jakarta.
- Williams, A.C. dan Barry, B.W. 2004. *Penetration Enhancers. Advanced Drug Delivery Reviews.* 27;56(5):603-618, <https://doi.org/10.1016/j.addr.2003.10.025>
- Witt, K. and Bucks, D., 2003. *Studying In Vitro Skin Penetration and Drug Release to Optimize Dermatological Formulation.* Dalam: *Pharmaceutical Technology.* Advanstar Communications Inc., New York
- Yilmaza C., Ozdemirb F., Gokmen V., 2020. *Investigation of free amino acids, bioactive and neuroactive compounds in different types of tea and effect of black tea processing.* Department of Food Engineering, Akdeniz University, 07059, Antalya; Turkey. Vol 117
- Zaid A. A., Crudden N.C., Maeliosa T.C., Donnelly R.F., 2015. *Transdermal Drug Delivery: Innovative Pharmaceutical Developments Based on Disruption of the Barrier Properties of the stratum corneum.* *Pharmaceutics*; 7(4): 438-470
- Zhiwen, Deng, Zeng, Yi, Guangcan, Chen, Xiaomin, Ma, Ya Tang b, Xudong L., 2020. *Green tea polyphenol nanoparticle as a novel adsorbent to remove Pb<sup>2+</sup> from wastewater.* *Materials Letters*
- Zowail M. E. M., Khater E. H .H., and EL-Asrag, M.E.M., 2009. *Protective effect of green tea extract against cytotoxicity induced by enrofloxacin in rat Egypt.* *Acad. J. 74iology. Sci.*, 1 (1): 45 – 64



# Lampiran

## Lampiran 1. Skema Kerja



**Lampiran 2. Hasil perhitungan rendemen ekstrak dan hasil uji kandungan kimia ekstrak teh hijau**

**Tabel 1. Hasil rendemen ekstrak teh hijau**

<b>Sampel</b>	<b>Bobot (g)</b>
Serbuk simplisia kering	1000
Ekstrak serbuk teh	207,38





$$\% \text{Rendemen} = \frac{\text{Bobot ekstrak serbuk}}{\text{Bobot simplisia}} \times 100\%$$

$$= \frac{207,38}{1000} \times 100\%$$

$$= 20,74\%$$

### Lampiran 3. Hasil uji kandungan kimia ekstrak teh hijau

Tabel 2. Hasil uji kandungan kimia ekstrak teh hijau

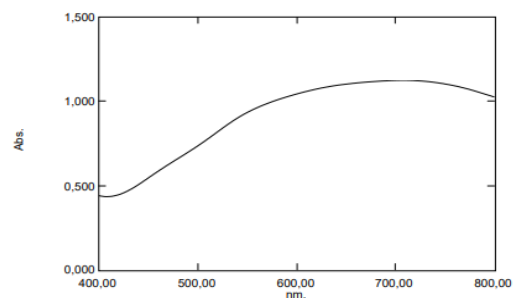
Golongan senyawa		Hasil	Gambar	Keterangan
Alkaloid	- Dragendorf	Terbentuk 2 lapisan yang berpisah		+
	Flavonoid	Terbentuk warna merah		+
	Fenol	Terbentuk warna hitam		+
	Saponin	Terbentuk busa		+

## Lampiran 4. Perhitungan kadar polifenol total

### a. Panjang gelombang maksimum asam galat

**LABORATORIUM BIOFARMAKA**  
**FAKULTAS FARMASI UNIVERSITAS HASANUDDIN**

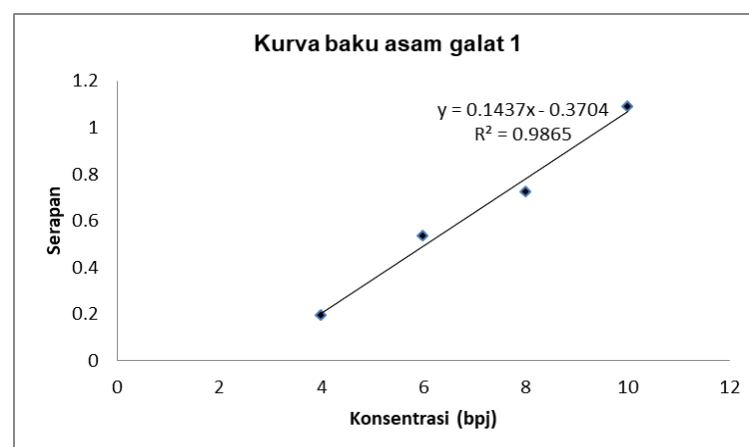
Gedung Pusat Kegiatan Penelitian Lantai IV Wing B



No.	P/V	Wavelength	Abs.	Description
1		708,00	1,125	
2		408,00	0,434	

### b. Kurva baku asam galat 1

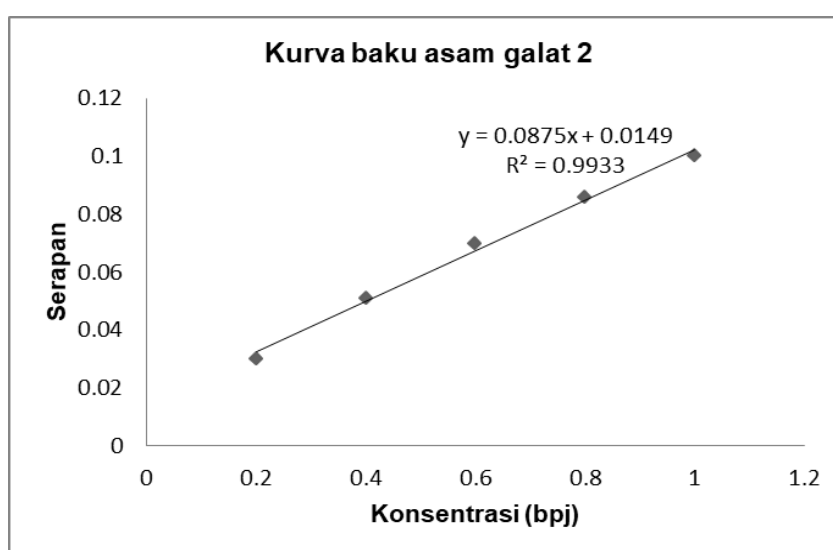
Konsentrasi (bpj)	Serapan
4	0,196
6	0,533
8	0,722
10	1,091



**Gambar 9.** Kurva baku asam galat 1 untuk menghitung kadar polifenol dalam ekstrak

## b. Kurva baku asam galat 2

Konsentrasi (bpj)	Serapan
0,2	0,030
0,4	0,051
0,6	0,070
0,8	0,086
1,0	0,100



Gambar 10. Kurva baku asam galat 2 untuk menghitung zat aktif yang terpenetrasi

## c. Hasil perhitungan kadar total polifenol dalam ekstrak teh hijau

Konsentrasi ekstrak (mg)	Serapan	Kandungan polifenol ( $\mu\text{g/ml}$ )	%b/b Kandungan polifenol total
	0,682	7,32	73,2
10	0,729	7,65	76,5
	0,702	7,46	74,6
<b>Rata-rata</b>	<b>0,704</b>	<b>7,47 <math>\pm</math> 0,16</b>	<b>74,7 <math>\pm</math> 1,66</b>

## Perhitungan rata-rata serapan

Persamaan garis regresi untuk kurva baku :

$Y = 0,1437x - 0,3704$  dengan koefisien korelasi = 0,9865

X adalah konsentrasi

Y adalah serapan

$$Y = ax + b$$

$$0,704 = 0,1437x + (-0,3704)$$

$$0,704 = 0,1437x - 0,3704$$

$$0,1437x = 0,704 + 0,3704$$

$$\text{Sehingga } X = \frac{Y+b}{a}$$

misalnya, serapan 0,704, maka :

$$X = \frac{0,704 + 0,3704}{0,1437}$$

$$= \frac{1,0744}{0,1437}$$

$$= 7,47 \mu\text{g/ml}$$

Keterangan :

Bobot yang ditimbang = 0,01 g

Dibuat menjadi 1000 bpj (0,01g/10ml)

Diambil 0,05 ml diencerkan hingga 5 ml

$$\text{Faktor pengencer} = \frac{5 \text{ ml}}{0,05} = 100 = \frac{1000}{10}$$

$$= 100$$

Konversi menjadi %b/b dengan cara :

$$\% \text{ b/b} = \frac{\text{Konsentrasi} \times \text{Faktor pengencer} \times \text{volume awal}}{\text{Bobot sampel yang ditimbang}} \times 100\%$$

$$= \frac{7,47 \times 100 \times 10}{0,01 \text{ g}} \times 100\%$$

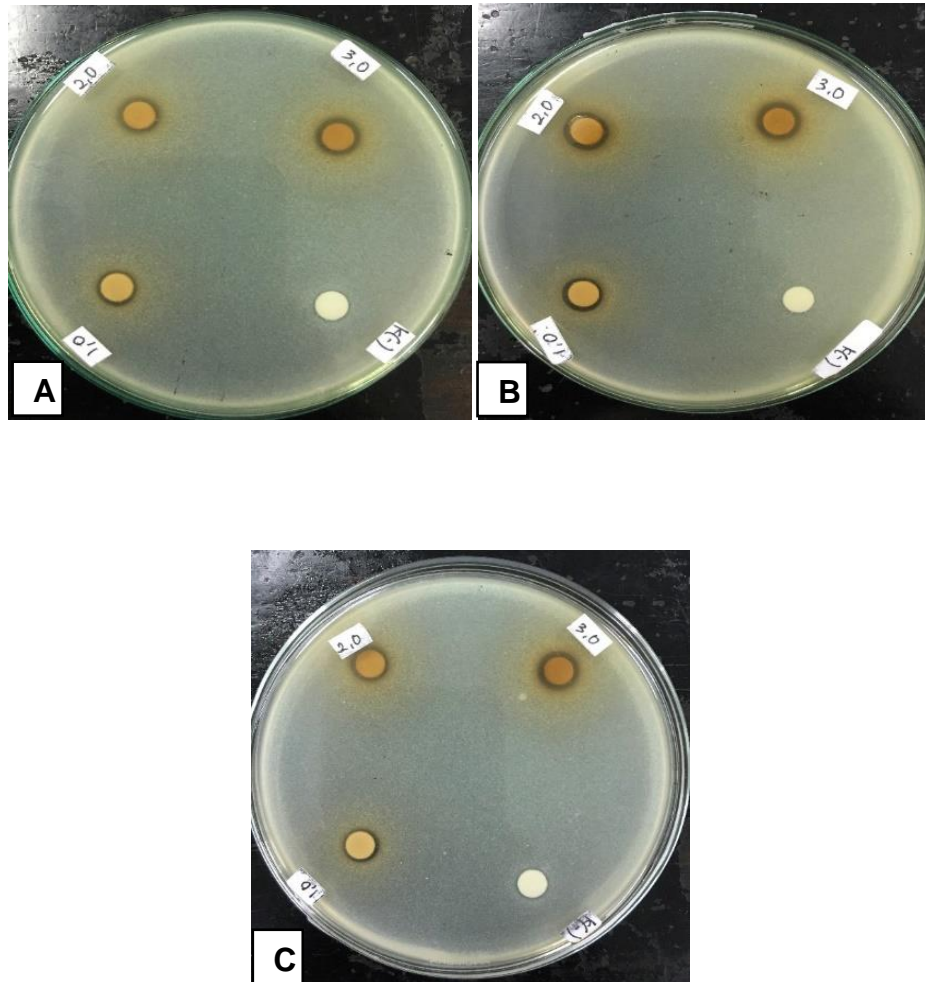
$$= \frac{7,470 \mu\text{g}}{0,01 \text{ g}} \times 100\%$$

$$= \frac{0,00747 \text{ g}}{0,01 \text{ g}} \times 100\%$$

$$\% \text{ b/b} = 74,7 \%$$



Lampiran 5. Uji aktivitas antibakteri ekstrak teh hijau terhadap bakteri *Staphylococcus aureus*



Gambar 9. Daya hambat ekstrak teh hijau dengan konsentrasi 1%, 2%, 3% terhadap bakteri *Staphylococcus aureus* (A), (B), (C)

**Lampiran 6. Data uji pH gel saat awal terbentuk dan setelah penyimpanan 3 minggu**

Tabel. 3 Hasil uji pH gel saat awal terbentuk dan setelah penyimpanan 3 minggu

Formula	Hasil uji pH					
	Awal terbentuk			Setelah 3 minggu		
	Nilai	Rata-rata	SD	Nilai	Rata-rata	SD
F1	5,97			5,97		
	5,97	5,97	0,005	5,95	5,96	0,011
	5,96			5,95		
F2	6,71			6,19		
	6,70	6,71	0,005	6,20	6,19	0,005
	6,71			6,19		
F3	6,76			6,46		
	6,76	6,76	0,005	6,46	6,46	-
	6,75			6,46		
F4	6,07			6,45		
	6,07	6,07	-	6,44	6,44	0,005
	6,07			6,44		

**Lampiran 7. Data uji viskositas gel saat awal terbentuk dan setelah penyimpanan 3 minggu**

Tabel 4. Data uji viskositas gel saat awal terbentuk

<b>Formula</b>	<b>Dial Reading</b>	<b>Faktor koreksi</b>	<b>Viskositas</b>	<b>Rata-rata</b>	<b>Standar devisi</b>
F1	35	800	28.800	26.400	1,39
	32	800	25.600		
	32	800	25.600		
F2	34	800	27.200	26.133	0,92
	32	800	25.600		
	32	800	25.600		
F3	34	800	27.200	26.400	1,39
	31	800	24.800		
	39	800	31.200		
F4	39	800	31.200	30.667	0,92
	37	800	29.600		

Tabel 5. Data uji viskositas gel setelah penyimpanan 3 minggu

<b>Formula</b>	<b>Deal Reading</b>	<b>Faktor koreksi</b>	<b>Viskositas</b>	<b>Rata-Rata</b>	<b>Standar Deviasi</b>
F1	34	800	27.200	26.133	0,924
	32	800	25.600		
	32	800	25.600		
F2	33	800	26.400	24.800	1,848
	30	800	24.000		
	30	800	24.000		
F3	34	800	27.200	26.400	0,800
	33	800	26.400		
	32	800	25.600		
F4	37	800	29.600	29.067	0,462
	36	800	28.800		
	36	800	28.800		

**Lampiran 8. Hasil uji daya lekat sediaan gel ekstrak teh hijau**

Tabel 7. Data uji daya lekat

<b>Formula</b>	<b>Sebelum penyimpanan (detik)</b>	<b>Setelah penyimpanan (detik)</b>
F1	1,190 ± 0,14	1,177 ± 0,16
F2	1,437 ± 0,20	1,301 ± 0,26
F3	1,403 ± 0,38	1,210 ± 0,10
F4	1,223 ± 0,20	1,363 ± 0,07

**Lampiran 9. Data hasil uji penetrasi gel**

**Tabel 8. Formula 1**

<b>Waktu (menit)</b>	<b>Serapan</b>	<b>Konsentrasi (µg/ml)</b>	<b>1 ml (µg)</b>	<b>Faktor dilusi</b>	<b>10 ml (mg)</b>	<b>Faktor koreksi</b>	<b>Polifenol terpenetrasi (mg)</b>	<b>% Penetrasi</b>
15	0.048	0,38	0,38	50	0.018914286	0	0,018914	8,5974
30	0.056	0,47	0,47	50	0.023485714	0.0003783	0,023864	1,8472
45	0.045	0,34	0,34	50	0.0172	0.0008480	0,018048	8,2036
60	0.047	0,37	0,37	50	0.018342857	0.0011920	0,019534	8,8794
120	0.054	0,45	0,45	50	0.022342857	0.0015589	0,023901	10,8644
180	0.058	0,49	0,49	50	0.024628571	0.0020057	0,026634	12,1064
240	0.049	0,39	0,39	50	0.019485714	0.0024983	0,021984	9,9927
300	0.058	0,49	0,49	50	0.024628571	0.0028880	0,027516	12,5075
360	0.044	0,33	0,33	50	0.016628571	0.0033806	0,020009	9,0950
480	0.050	0,40	0,40	50	0.020057143	0.0037817	0,023838	10,8358

Keterangan:

Faktor dilusi : Pengenceran

Faktor koreksi : Konsentrasi jam sebelumnya

**Tabel 9. Formula 2**

Waktu (menit)	Serapan	Konsentrasi (µg/ml)	1 ml (µg)	Faktor dilusi	10 ml (mg)	Faktor koreksi	Polifenol terpenetrasi (mg)	% Penetrasi
15	0.056	0,47	0,47	50	0,023485714	0	0,023485	10,6753
30	0.057	0,48	0,48	50	0,024057143	0.0004697	0,024526	11,1485
45	0.064	0,56	0,56	50	0,028057143	0.0009509	0,029008	13,1854
60	0.061	0,53	0,53	50	0,026342857	0.0015120	0,027854	12,6612
120	0.074	0,68	0,68	50	0,033771429	0.0020389	0,035810	16,2774
180	0.079	0,73	0,73	50	0,036628571	0.0027143	0,039342	17,8831
240	0.087	0,82	0,82	50	0,0412	0.0034469	0,044646	20,2940
300	0.091	0,87	0,87	50	0,043485714	0.0042709	0,047756	21,7075
360	0.088	0,84	0,84	50	0,041771429	0.0051406	0,046912	21,3236
480	0.097	0,94	0,94	50	0,046914286	0.0059760	0,052890	24,0410



**Tabel 10. Formula 3**

<b>Waktu (menit)</b>	<b>Serapan</b>	<b>Konsentrasi (µg/ml)</b>	<b>1 ml (µg)</b>	<b>Faktor dilusi</b>	<b>10 ml (mg)</b>	<b>Faktor koreksi</b>	<b>Polifenol terpenetrasi (mg)</b>	<b>% Penetrasi</b>
15	0.058	0,49	0,49	50	0,024628	0	0,0246285	11,1948
30	0.046	0,36	0,36	50	0,017771	0,0004926	0,0182640	8,30181
45	0.046	0,36	0,36	50	0,017771	0,0008480	0,0186194	8,46337
60	0.059	0,50	0,50	50	0,025200	0,0012034	0,0264034	12,00155
120	0.057	0,48	0,48	50	0,0240571	0,0017074	0,0257645	11,71116
180	0.061	0,53	0,53	50	0,0263428	0,0021886	0,0285314	12,96883
240	0.059	0,50	0,50	50	0,025200	0,0027154	0,0279154	12,68883
300	0.060	0,52	0,52	50	0,0257714	0,0032194	0,0289908	13,17766
360	0.068	0,61	0,61	50	0,0303428	0,0037349	0,0340777	15,48987
480	0.068	0,61	0,61	50	0,0303428	0,0043417	0,0346845	15,76571

**Tabel 11. Formula 4**

<b>Waktu (menit)</b>	<b>Serapan</b>	<b>Konsentrasi (µg/ml)</b>	<b>1 ml (µg)</b>	<b>Faktor dilusi</b>	<b>10 ml (mg)</b>	<b>Faktor koreksi</b>	<b>Polifenol terpenetrasi (mg)</b>	<b>% Penetrasi</b>
15	0.060	0,52	0,52	50	0,0257714	0	0,025771	11,7142
30	0.048	0,38	0,38	50	0,0189142	0,0005154	0,019429	8,8316
45	0.066	0,58	0,58	50	0,0292000	0,0008937	0,030093	13,6789
60	0.064	0,56	0,56	50	0,0280571	0,0014777	0,029534	13,4249
120	0.082	0,77	0,77	50	0,0383428	0,0020389	0,040381	18,3553
180	0.099	0,96	0,96	50	0,0480571	0,0028057	0,050862	23,1194
240	0.078	0,72	0,72	50	0,0360571	0,0037669	0,039824	18,1018
300	0.080	0,74	0,74	50	0,0372	0,0044880	0,041688	18,9490
360	0.093	0,89	0,89	50	0,0446285	0,0052320	0,049860	22,6638
480	0.081	0,76	0,76	50	0,0377714	0,0061246	0,043896	19,9527

### Lampiran 10. Perhitungan hasil uji penetrasi gel

Polifenol dalam ekstrak 74,7% =  $74,7/100 = 0,747$  gram (30 mg)

$30/100 \times 0,747 = 0,2241$  mg (polifenol dalam 1 gram gel)

Perhitungan formula 4 menit (480) :

Berdasarkan persamaan garis regresi kurva baku :

$Y = 0,0875x + 0,0149$  dengan koefisien korelasi = 0,9933

X adalah konsentrasi

Y adalah serapan

Pengenceran sediaan =  $Fp = \frac{10 \text{ ml}}{0,2 \text{ ml}} = 50$

$$= \frac{Y - a}{b}$$

$$X = \frac{0,081 - 0,0149}{0,0875}$$

= 0,756  $\mu\text{g/ml}$

Konsentrasi dalam 1 ml = 0,756  $\mu\text{g/ml}$

Konsentrasi dalam 10 ml =  $\frac{\text{Konsentrasi dalam 1 ml} \times \text{Faktor dilusi}}{1000}$

$$= \frac{0,756 \mu\text{g/ml} \times 50}{1000}$$

= 0,0378 mg

Jumlah terpenetrasi = Konsentrasi dalam 10 ml + Faktor koreksi

= 0,0378 + 0,00612

= 0,0432 mg

% Penetrasi =  $\frac{\text{Jumlah polifenol yang terpenetrasi}}{\text{Jumlah total polifenol dalam 1 gram gel}} \times 100\%$

$$= \frac{0,0432 \text{ mg}}{0,2241 \text{ mg}} \times 100\%$$

= 19,9%

### Lampiran 11. Perhitungan hasil uji retensi

Data perhitungan Uji retensi pada formula 1

Berdasarkan persamaan garis regresi kurva baku :

$$Y = 0,0875x + 0,0149 \text{ dengan koefisien korelasi} = 0,996$$

X adalah konsentrasi

Y adalah serapan

$$\text{Pengenceran} = Fp = \frac{10 \text{ ml}}{0,2 \text{ ml}} = 50$$

$$= \frac{Y - a}{b}$$

$$X = \frac{0,137 - 0,0149}{0,0875} = 1,395 \mu\text{g/ml}$$

$$X = 1,395 \mu\text{g/ml}$$

Jumlah polifenol dalam 1 gram gel = 0,2241 mg

$$= 1,395 \mu\text{g/ml} \times 50\text{ml}$$

$$= \frac{69,75 \mu\text{g}}{1000}$$

$$= \frac{0,06975\text{mg}}{0,2241 \text{ mg}}$$

$$= 0,32\%$$

## Lampiran 12. Hasil paired t-test pH gel

Paired t-test (pH awal dibandingkan dengan pH 30 hari setelah penyimpanan)

Formula 1 :

Table Analyzed	pH awal-akhir
Column B	F1 akhir
vs.	vs,
Column A	F1 awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,2254</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed
t, df	t=1,732, df=2
Number of pairs	3

Formula 2 :

Table Analyzed	pH awal-akhir
Column D	F2 akhir
vs.	vs,
Column C	F2 awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,0002</b>
<b>P value summary</b>	<b>***</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>Yes</b>
One- or two-tailed P value?	Two-tailed
t, df	t=77,00, df=2
Number of pairs	3

Formula 3 :

Table Analyzed	pH awal-akhir
Column F	F3 akhir
vs.	vs,
Column E	F3 awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,0001</b>
<b>P value summary</b>	<b>***</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>Yes</b>
One- or two-tailed P value?	Two-tailed
t, df	t=89,00, df=2
Number of pairs	3

Formula 4 :

Table Analyzed	pH awal-akhir
Column H	F4akhir
vs.	vs,
Column G	F4awal
<b>Paired t test</b>	
<b>P value</b>	<b>&lt;0,0001</b>
<b>P value summary</b>	<b>****</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>Yes</b>
One- or two-tailed P value?	Two-tailed
t, df	t=112,0, df=2
Number of pairs	3



### Lampiran 13. Hasil paired t-test viskositas

**Paired t-test (Viskositas awal dibandingkan dengan viskositas 30 hari setelah penyimpanan)**

Formula 1 :

Table Analyzed	Visko awal-akhir
Column B	F1akhir
vs.	vs,
Column A	F1awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,4226</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed
t, df	t=1,000, df=2
Number of pairs	3

Formula 2 :

Table Analyzed	Visko awal-akhir
Column D	F2akhir
vs.	vs,
Column C	F2awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,0377</b>
<b>P value summary</b>	<b>*</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>Yes</b>
One- or two-tailed P value?	Two-tailed
t, df	t=5,000, df=2
Number of pairs	3

Formula 3 :

Table Analyzed	Visko awal-akhir
Column F	F3akhir
vs.	vs,
Column E	F3awal
<b>Paired t test</b>	
<b>P value</b>	<b>&gt;0,9999</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>

One- or two-tailed P value?	Two-tailed
t, df	t=0,000, df=2
Number of pairs	3

Formula 4 :

Table Analyzed	Visko awal-akhir
Column H	F4akhir
vs.	vs,
Column G	F4awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,0742</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed
t, df	t=3,464, df=2
Number of pairs	3

## Lampiran 14. Analisis anova pH gel

### pH gel awal

Table Analyzed	pH ANOVA awal
Data sets analyzed	A-D
ANOVA summary	
F	20617
P value	<0,0001
P value summary	****
Significant diff. among means (P < 0.05)?	Yes
R squared	0,9999

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	1,546	3	0,5154	F (3, 8) = 20617	P<0,0001
Residual (within columns)	0,0002000	8	2,500e-005		
Total	1,547	11			

### Post-hoc (Tukey)

Tukey's multiple comparisons test	Mean Diff,	95,00% CI of diff,	Below threshold?	Summary	Adjusted P Value	
F1 vs. F2	-0,7400	-0,7531 to -0,7269	Yes	****	<0,0001	A-B
F1 vs. F3	-0,7900	-0,8031 to -0,7769	Yes	****	<0,0001	A-C
F1 vs. F4	-0,1033	-0,1164 to -0,09026	Yes	****	<0,0001	A-D
F2 vs. F3	-0,05000	-0,06307 to -0,03693	Yes	****	<0,0001	B-C
F2 vs. F4	0,6367	0,6236 to 0,6497	Yes	****	<0,0001	B-D
F3 vs. F4	0,6867	0,6736 to 0,6997	Yes	****	<0,0001	C-D

### pH gel setelah disimpan 30 hari

Table Analyzed	pH ANOVA 30 hari
Data sets analyzed	A-D
ANOVA summary	
F	3400
P value	<0,0001
P value summary	****
Significant diff. among means (P < 0.05)?	Yes
R squared	0,9992

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	0,5101	3	0,1700	F (3, 8) = 3400	P<0,0001
Residual (within columns)	0,0004000	8	5,000e-005		
Total	0,5105	11			

### Post-hoc (Tukey)

Tukey's multiple comparisons test	Mean Diff,	95,00% CI of diff,	Below threshold?	Summary	Adjusted P Value	
F1 vs. F2	-0,2367	-0,2552 to -0,2182	Yes	****	<0,0001	A-B
F1 vs. F3	-0,5033	-0,5218 to -0,4848	Yes	****	<0,0001	A-C
F1 vs. F4	-0,4867	-0,5052 to -0,4682	Yes	****	<0,0001	A-D
F2 vs. F3	-0,2667	-0,2852 to -0,2482	Yes	****	<0,0001	B-C
F2 vs. F4	-0,2500	-0,2685 to -0,2315	Yes	****	<0,0001	B-D
F3 vs. F4	0,01667	-0,001822 to 0,03516	No	ns	0,0781	C-D

## Lampiran 15. Analisis anova viskositas gel

### Viskositas gel awal

Table Analyzed	Visko ANOVA
Data sets analyzed	awal
ANOVA summary	A-D
F	10,29
P value	0,0040
P value summary	**
Significant diff. among means (P < 0.05)?	Yes
R squared	0,7943

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	66,92	3	22,31	F (3, 8) = 10,29	P=0,0040
Residual (within columns)	17,33	8	2,167		
Total	84,25	11			

### Post-hoc (Tukey)

Tukey's multiple comparisons test	Mean Diff,	95,00% CI of diff,	Below threshold?	Summary	Adjusted P Value	
F1 vs. F2	0,3333	-3,515 to 4,182	No	ns	0,9920	A-B
F1 vs. F3	0,000	-3,849 to 3,849	No	ns	>0,9999	A-C
F1 vs. F4	-5,333	-9,182 to -1,485	Yes	**	0,0094	A-D
F2 vs. F3	-0,3333	-4,182 to 3,515	No	ns	0,9920	B-C
F2 vs. F4	-5,667	-9,515 to -1,818	Yes	**	0,0066	B-D
F3 vs. F4	-5,333	-9,182 to -1,485	Yes	**	0,0094	C-D

### Viskositas gel setelah disimpan 30 hari

Table Analyzed	Visko ANOVA 30 hari
Data sets analyzed	A-D
ANOVA summary	
F	10,57
P value	0,0037
P value summary	**
Significant diff. among means (P < 0.05)?	Yes
R squared	0,7985

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	44,92	3	14,97	F (3, 8) = 10,57	P=0,0037
Residual (within columns)	11,33	8	1,417		
Total	56,25	11			

**Post-hoc (Tukey)**

Tukey's multiple comparisons test	Mean Diff,	95,00% CI of diff, threshold?	Below	Summary	Adjusted P Value	
F1 vs. F2	1,667	-1,445 to 4,779	No	ns	0,3763	A-B
F1 vs. F3	-0,3333	-3,445 to 2,779	No	ns	0,9851	A-C
F1 vs. F4	-3,667	-6,779 to -0,5545	Yes	*	0,0226	A-D
F2 vs. F3	-2,000	-5,112 to 1,112	No	ns	0,2449	B-C
F2 vs. F4	-5,333	-8,445 to -2,221	Yes	**	0,0026	B-D
F3 vs. F4	-3,333	-6,445 to -0,2212	Yes	*	0,0363	C-D

## Lampiran 16. Hasil paired t-test daya lekat

**Paired t-test (Daya lekat awal dibandingkan dengan daya lekat 30 hari setelah penyimpanan)**

Formula 1 :

Table Analyzed	Dlekat awal-akhir
Column B	F1akhir
vs.	vs,
Column A	F1awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,9438</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed
t, df	t=0,07957, df=2
Number of pairs	3

Formula 2 :

Table Analyzed	Dlekat awal-akhir
Column D	F2akhir
vs.	vs,
Column C	F2awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,6651</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed
t, df	t=0,5026, df=2
Number of pairs	3

Formula 3 :

Table Analyzed	Dlekat awal-akhir
Column F	F3akhir
vs.	vs,
Column E	F3awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,4863</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed

t, df	t=0,8466, df=2
Number of pairs	3

Formula 4 :

Table Analyzed	Dlekat awal-akhir
Column H	F4akhir
vs.	vs,
Column G	F4awal
<b>Paired t test</b>	
<b>P value</b>	<b>0,4586</b>
<b>P value summary</b>	<b>ns</b>
<b>Significantly different (P &lt; 0.05)?</b>	<b>No</b>
One- or two-tailed P value?	Two-tailed
t, df	t=0,9107, df=2
Number of pairs	3
R squared	0,7943



## Lampiran 17. Analisis anova daya lekat

	Dlekat ANOVA
Table Analyzed	awal
Data sets analyzed	A-D
ANOVA summary	
F	0,7678
P value	0,5435
P value summary	ns
Significant diff. among means (P < 0.05)?	No
R squared	0,2235

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	0,1399	3	0,04662	F (3, 8) = 0,7678	P=0,5435
Residual (within columns)	0,4858	8	0,06073		
Total	0,6257	11			

### Post-hoc (Tukey)

Tukey's multiple comparisons test	Mean Diff,	95,00% CI of diff,	Below threshold?	Summary	Adjusted P Value	
F1 vs. F2	-0,2467	-0,8910 to 0,3977	No	ns	0,6291	A-B
F1 vs. F3	-0,2133	-0,8577 to 0,4310	No	ns	0,7213	A-C
F1 vs. F4	-0,03333	-0,6777 to 0,6110	No	ns	0,9982	A-D
F2 vs. F3	0,03333	-0,6110 to 0,6777	No	ns	0,9982	B-C
F2 vs. F4	0,2133	-0,4310 to 0,8577	No	ns	0,7213	B-D
F3 vs. F4	0,1800	-0,4643 to 0,8243	No	ns	0,8081	C-D

### Daya lekat gel setelah disimpan 30 hari

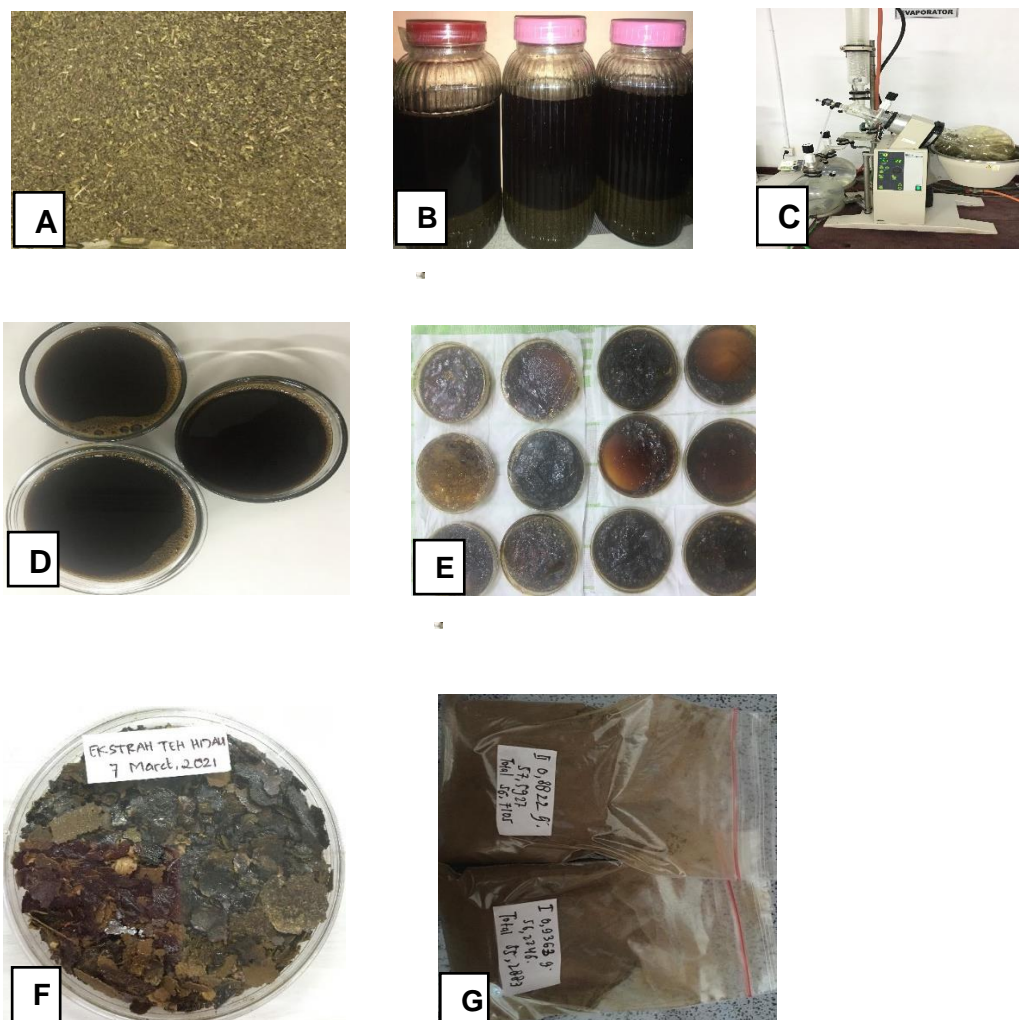
	Dlekat ANOVA 30 hari
Table Analyzed	
Data sets analyzed	A-D
ANOVA summary	
F	0,8303
P value	0,5136
P value summary	ns
Significant diff. among means (P < 0.05)?	No
R squared	0,2374

ANOVA table	SS	DF	MS	F (DFn, DFd)	P value
Treatment (between columns)	0,06669	3	0,02223	F (3, 8) = 0,8303	P=0,5136
Residual (within columns)	0,2142	8	0,02678		
Total	0,2809	11			

### Post-hoc (Tukey)

Tukey's multiple	Mean	95,00% CI of diff,	Below	Summary	Adjusted P
------------------	------	--------------------	-------	---------	------------

comparisons test	Diff,	threshold?	Value	
F1 vs. F2	-0,1300 -0,5578 to 0,2978	No	ns	0,7681 A-B
F1 vs. F3	-0,03333 -0,4612 to 0,3945	No	ns	0,9941 A-C
F1 vs. F4	-0,1867 -0,6145 to 0,2412	No	ns	0,5344 A-D
F2 vs. F3	0,09667 -0,3312 to 0,5245	No	ns	0,8850 B-C
F2 vs. F4	-0,05667 -0,4845 to 0,3712	No	ns	0,9727 B-D
F3 vs. F4	-0,1533 -0,5812 to 0,2745	No	ns	0,6729 C-D

**Lampiran 18. Gambar penelitian**

Gambar 8. (A) serbuk teh hijau, (B) proses ekstraksi teh hijau, (C) hasil filtrat teh hijau yang di *Rotary evaporator*, (D) ekstrak cair, (E) ekstrak cair yang telah di *Freeze dryer*, (F) ekstrak sebelum digerus, (G) serbuk teh hijau hasil ekstraksi.

## Lampiran 19. Persetujuan kode etik hewan coba

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI  
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN  
KOMITE ETIK PENELITIAN KESEHATAN  
RSPTN UNIVERSITAS HASANUDDIN  
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR  
Sekretariat : Lantai 2 Gedung Laboratorium Terpadu  
JALURINTIS KEMERDEKAAN KAMPUS TAMALANEA SALID MAKASSAR 90245.  
Contact Person: dr. Agussalim Bukhari, M.Med.,Ph.D., Sp.CK. TELP. 08124180858, 0411 5792023. Fax : 0411-581431

**BEKOMENDASI PERSETUJUAN ETIK**  
Nomor : 673/UN4.6.4.5.31/ PP36/ 2021

Tanggal: 21 Oktober 2021

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH21090550	No Sponsor	
Peneliti Utama	Nur Faizah,S.Farm	Sponsor	
Judul Peneliti	Pengaruh bahan peneingkat penetrasi propilenglikol dan gliserin terhadap kestabilan fisik, laju penetrasi dan aktivitas antibakteri dari gel ekstrak teh hijau (Camellia sinensis L)		
No Versi Protokol	1	Tanggal Versi	27 Agustus 2021
No Versi PSP		Tanggal Versi	
Tempat Penelitian	Fakultas Farmasi Universitas Hasanuddin Makassar		
Jenis Review	<input type="checkbox"/> Exempted <input checked="" type="checkbox"/> Expedited <input type="checkbox"/> Fullboard Tanggal	Masa Berlaku 21 Oktober 2021 sampai 21 Oktober 2022	Frekuensi review lanjutan
Ketua KEPK FKUH RSUH dan RSWS	Nama Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)	Tanda tangan	
Sekretaris KEPK FKUH RSUH dan RSWS	Nama dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (K)	Tanda tangan	

**Kewajiban Peneliti Utama:**

- Menyampaikan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyampaikan Laporan SAE ke Komisi Etik dalam 24 jam dan dilengkapi dalam 7 hari dan Laporan SUSAR dalam 72 jam setelah Peneliti Utama menerima laporan
- Menyampaikan Laporan Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap setahun untuk penelitian resiko rendah
- Menyampaikan laporan akhir setelah Penelitian berakhir
- Melaporkan penyimpangan dari protokol yang disetujui (protocol deviation / violation)
- Mematuhi semua peraturan yang ditentukan