

#1165 Summary

[SUMMARY](#) [REVIEW](#) [EDITING](#)

Submission

Authors	Arisanty Arisanty, Tajuddin Abdullah, Muli Sukmawaty
Title	FORMULASI DAN EFEK ANTI BAKTERI SEDIAAN GEL PENCUCI TANGAN DARI MINYAK ATSIRI DAUN KEMANGI (<i>Occimum basilicum L.</i>) TERHADAP <i>Escherichia coli</i>
Original file	1165-4331-2-SM.DOC
Supp. files	None
Submitter	Ny Muli Sukmawaty
Date submitted	September 19, 2019 - 06:46 AM
Section	Articles
Editor	Hendra Stevani
Abstract Views	974

Status

Status	Published Vol 15, No 2 (2019): MEDIA FARMASI
Initiated	2019-12-02
Last modified	2020-11-18

Submission Metadata

Authors

Name	Arisanty Arisanty
ORCID iD	http://orcid.org/0000-0002-6053-3752
Affiliation	Poltekkes Kemenkes Makassar
Country	Indonesia
Bio Statement	—
Principal contact for editorial correspondence.	Tajuddin Abdullah
Name	Tajuddin Abdullah
Affiliation	Poltekkes Kemenkes Makassar
Country	Indonesia
Bio Statement	—
Name	Muli Sukmawaty
Affiliation	Poltekkes Kemenkes Makassar
Country	Indonesia
Bio Statement	—

Title and Abstract

Title FORMULASI DAN EFEK ANTI BAKTERI SEDIAAN GEL PENCUCI TANGAN DARI MINYAK ATSIRI DAUN KEMANGI (*Occimum basilicum L.*) TERHADAP *Escherichia coli*

Abstract

Basil essential oil (Occimum basilicum L.) has inhibitory properties against Escherichia coli (KBM value of 0.25%) and therefore has the potential to be used as a handwashing gel. This study aims to formulate the essential oils of basil leaves (Occimum basilicum L.) in the form of a physically stable handwashing gel and test its effectiveness on the growth of Escherichia coli. The gel formula was made using Carbopol base with variations in concentration of 0.1%, 0.2%, 0.3% and 0.4%. It was then tested for physical quality strength using the accelerated stability testing method with the Climatic Chamber. The most stable gel formula was tested for its effectiveness against Escherichia coli through the agar diffusion method. The results obtained an average inhibition of gels without and with essential oils of 9.67 mm and 15.67 mm, respectively. The results of statistical tests showed that the inhibition of handwashing gel with essential oils from the basil leaves (Occimum basilicum L.) was significantly greater than preparations without essential oils ($p < 0.05$).

Keywords: Gel , basil essential oil, *Escherichia coli*

Minyak atsiri Daun Kemangi (*Occimum basilicum L.*) memiliki daya hambat terhadap *Escherichia coli* (Nilai KBM 0,25%) sehingga berpotensi untuk diformulasikan dalam bentuk gel pencuci tangan. Penelitian ini bertujuan untuk memformulasikan minyak atsiri daun kemangi (*Occimum basilicum L.*) dalam bentuk sediaan gel pencuci tangan yang stabil secara fisik dan menguji efektifitas gel tersebut terhadap pertumbuhan *Escherichia coli*. Formula gel dibuat menggunakan basis Carbopol dengan variasi konsentrasi yaitu 0,1 %, 0,2%, 0,3% dan 0,4%. Formula gel tersebut kemudian diuji kestabilan mutu fisiknya menggunakan metode pengujian kestabilan dipercepat dengan alat Climatic Chamber. Formula gel yang paling stabil kemudian diuji efektifitasnya terhadap *Escherichia coli* dengan metode difusi agar. Hasil yang diperoleh daya hambat rata-rata gel tanpa minyak atsiri adalah 9,67 mm sedangkan untuk gel dengan minyak atsiri adalah 15,67 mm. Hasil pengujian statistik menunjukkan daya hambat Gel pencuci tangan dengan minyak atsiri Daun Kemangi (*Occimum basilicum L.*) signifikan lebih besar dari sediaan tanpa minyak atsiri ($p < 0,05$).

Kata kunci : Gel , minyak atsiri kemangi, *Escherichia coli*

Indexing

Language id

Supporting Agencies

Agencies —

Petunjuk Registrasi

Petunjuk Submitte Artikel



Petunjuk Submitte Perbaikan Artikel

Sertifikat Sinta



USER

You are logged in as...
mulisukmawaty

- ▶ [My Journals](#)
- ▶ [My Profile](#)
- ▶ [Log Out](#)

AUTHOR

Submissions

- ▶ [Active \(0\)](#)
- ▶ [Archive \(1\)](#)
- ▶ [New Submission](#)

References

References

Aiello, Allison E. 2010. Mask use, hand hygiene, and seasonal influenza-like illness among young adults: A randomized intervention trial. *J Infect Dis.*, 201(4): 491-498

Alfitri, 2011. Community Development, Teori dan Aplikasi. Pustaka Pelajar,Yogyakarta.

Barel, O., Paye, M., Maibach, H.I., 2014, Handbook of Cosmetic Science and Technology,Fourth Edition, Taylor & Francis, United States, 98.

Bilal, Alia et al, 2012, Phytochemical and Pharmacological Studies on Ocimum basilicum Linn-A Review, *IJCRR*, 4 (23), 73-83.

Dirjen POM, 1995, Farmakope Indonesia, edisi IV, Departemen Kesehatan Republik Indonesia, Jakarta, 7.

Dryer D.L., et al., 1998,Testing a New Alcohol Free Hand Sanitizer to Combat Infection, *AORN Journal*, Vol. 68, No. 4, 239-251.

Fauzia, R.S., 2007. Uji Aktivitas Antibakteri Minyak Atsiri Daun Kemangi (*Occimum basilicum L.*) Terhadap *Staphylococcus aureus* dan *Escherichia coli*, Skripsi. Fakultas Farmasi Universitas Muhammadiyah Surakarta.

Fisher, K., Phillips, C.A., 2006, The Effect of Lemon, Orange, and Bergamot essential Oils and Their Components on the Survival of *Campylobacter jejuni*, *Escherichia coli* O157, *Listeria monocytogenes*, *Bacillus cereus*,and *Staphylococcus aureus* in vitro and in Food Systems, *Journal of Applied Microbiology*, 101(6), 1232-1240.

Girou, Emmanuelle. 2002. Efficacy of handrubbing with alcohol based solution versus standard handwashing with antiseptic soap: randomised clinical trial. *British Medical Journal*, 325.

Hammer, K. A., Carson, C. F., & Riley, T. V., 1999, Antimicrobial Activity of Essential Oil and Other Plant Extracts, *Journal of Applied Microbiology*, 86, 985-990.

Kurniawan, D.W., Wijayanto, B.A., Sobri, I., 2012, Formulation and Effectiveness of Antiseptic Hand Gel Preparations Essential Oils Galanga (*Alpinia galanga*), *Asian Journal of Pharmaceutical and Biological Research*, 2(4).

Kumari P.R.T.P., SundarS.K., dan Vijayalakshmi A.B., 2014,GC MS analysis and antibacterial activity of *Myristica fragrans* seed extracts against lower respiratory tract pathogen *Acinetobacter baumanii*,*Asian Journal of Pharmaceutical and Clinical Research*, 7(3), pp.126-129.

Larson, Elaine L. 2005. Hand Hygiene Behavior in a Pediatric Emergency Department and a Pediatric Intensive Care Unit: Comparison of Use of 2 Dispenser Systems. *Am J Crit Care*, 14(4): 304-31.

Lubrizol Corporation, 2009,Formulating Hydroalcoholic Gels with Carbopol Polymers: Technical Data Sheet, Lubrizol Advanced material Inc., Ohio, 16.

Mithun A.T., Udgade B.V., Manoj, B. and Pawade D.A., 2015,Formulation and Evaluation of Novel Herbal Hand Sanitizer, *Indo American Journal of Pharmaceutical Research*, 5 (01), pp. 483-487.

Miller, Michael A. 2006. Does the clinical use of ethanol-based hand sanitizer elevate blood alcohol levels? A prospective study. *The American Journal of Emergency Medicine*, 24(7): 815-817.

Myers, Ronnie. 2008. Hand Hygiene Among General Practice Dentists A Survey of Knowledge, Attitudes and Practices. *The Journal of the American Dental Association*, 139: 948-957.

Nurcahyanti, A.D.R., Dewi, L. dan Timotius, K.H. (2011). Aktivitas antioksidan dan antibakteri ekstrak polar dan non polar biji selasih (*Ocimum basilicum Linn*). *Jurnal Teknologi dan Industri Pangan* 1(XXI): 1-6.

Putra, H. H., Wibowo, M. H., Untari, T. and Kurniasih (2012) Studi lesi makroskopis dan mikroskopis embrio ayam yang diinfeksi virus Newcastle Disease isolat lapang yang virulen. *J. S. V.* 30: 57-67.

Retnosari, Isadiartuti, D., 2006, Studi Efektivitas Sediaan Gel pencuci tangan Tangan Ekstrak Daun Sirih (*Piper betle Linn.*), *Majalah Farmasi Indonesia*, 17(4), 163-169.

Romano, L., Battaglia, F., Masucci, L., Sanguinetti, M., Posteraro, B., Plotti, G., et al.,2005, In Vitro Activity of Bergamot Natural Essence and Furcoumarin-free and Distilled Extracts, and Their Associations with Boric Acid, against Clinical Yeast Isolates, *J. Antimicrobial Chemother*, 55, 110-114.

Schueller, R., Romanowski, P., 1999, Conditioning Agents for Hair and Skin, Marcell Dekker Inc., New York, 97-102.

Simonne, A., 2005, Hand Hygiene and Hand Sanitizers, IFAS Extension University of Florida, 2-3.

Suardi, M., Armenia, & Maryawati, A., 2008, Formulasi dan Uji Klinik Gel Anti Jerawat Benzoil Peroksida-HPMC, *Fakultas Farmasi FMIPA Universitas Andalas,Padang*, 1-3. 14.

Telci, I., Bayram, E., Yilmaz, G., & Avci, B., 2006, Variability in Essential Oil Composition of Turkish Basilis (*Ocimum basilicum L.*), *Biochemical Systemic Ecology*, 34, 489-497.

Traore, O., Hugonet,S., Lubbe, J., Griffiths, W., Pittet, D.,2007, Liquid versus Gel Handrub Formulation : a Prospective Intervention Study, *Critical Care*, 11(3), 1-8.

World Health Organization, 2005, Guidelines for Hand Hygiene in Health Care,Global Patient Safety Challenge, USA, 12-23.

Kontak Editor

Hendra Stevani

Jurusan Farmasi Poltekkes kemenkes Makassar

email : hendra@poltekkes-mks.ac.id

08324583

[View My Stats](#)

Visitors

	114,599
	2,619
	275
	185
	135
	115
	72
	66
	53
	53



This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](#).

#1165 Review

[SUMMARY](#) [REVIEW](#) [EDITING](#)

Submission

Authors	Arisanty Arisanty, Tajuddin Abdullah, Muli Sukmawaty 
Title	FORMULASI DAN EFEK ANTI BAKTERI SEDIAAN GEL PENCUCI TANGAN DARI MINYAK ATSIRI DAUN KEMANGI (Occimum basilicum L.) TERHADAP Escherichia coli
Section	Articles
Editor	Hendra Stevani 

Peer Review

Round 1

Review Version	1165-4342-1-RV.DOC 2019-09-19
Initiated	2019-10-18
Last modified	2019-11-21
Uploaded file	Reviewer A 1165-4693-1-RV.DOC 2019-10-25

Editor Decision

Decision	Accept Submission 2019-11-29
Notify Editor	 Editor/Author Email Record  2019-12-01
Editor Version	None
Author Version	1165-4957-1-ED.DOC 2019-11-29 
Upload Author Version	<input type="button" value="Choose File"/> No file chosen <input type="button" value="Upload"/>

Kontak Editor

Hendra Stevani

Jurusan Farmasi Poltekkes kemenkes Makassar

email : hendra@poltekkes-mks.ac.id

08324584[View My Stats](#)

Visitors

 114,599	 115
 2,619	 72
 275	 66
 185	 53
 135	 53

 counterThis work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](#).**Petunjuk Registrasi****Petunjuk Submitte Artikel**

Article template

Petunjuk Submitte Perbaikan Artikel

Sertifikat Sinta**USER**You are logged in as...
mulisukmawaty

- ▶ [My Journals](#)
- ▶ [My Profile](#)
- ▶ [Log Out](#)

AUTHOR

Submissions

- ▶ [Active \(0\)](#)
- ▶ [Archive \(1\)](#)
- ▶ [New Submission](#)

#1165 Editing

[SUMMARY](#) [REVIEW](#) [EDITING](#)

Submission

Authors	Arisanty Arisanty, Tajuddin Abdullah, Muli Sukmawaty 
Title	FORMULASI DAN EFEK ANTI BAKTERI SEDIAAN GEL PENCUCI TANGAN DARI MINYAK ATSIRI DAUN KEMANGI (Occimum basilicum L.) TERHADAP Escherichia coli
Section	Articles
Editor	Hendra Stevani 

Copyediting

COPYEDIT INSTRUCTIONS

	REQUEST	UNDERWAY	COMPLETE
1. Initial Copyedit	2019-12-01	—	2019-12-01
File: 1165-5014-1-CE.DOC 2019-12-01			
2. Author Copyedit	2019-12-01	2022-10-31 	
File: 1165-5014-2-CE.DOCX 2019-12-01			
	<input type="button" value="Choose File"/> No file chosen	<input type="button" value="Upload"/>	
3. Final Copyedit	—	—	2019-12-01
File: None			

Copyedit Comments  No Comments

Layout

	FILE		
1. PDF (Bahasa Indonesia) VIEW PROOF	1165-5016-1-PB.PDF 2019-12-01		426
Supplementary Files	FILE		

None

Layout Comments  No Comments

Proofreading

REVIEW METADATA

	REQUEST	UNDERWAY	COMPLETE
1. Author	2019-12-01	2022-10-31 	
2. Proofreader	2019-12-01	—	2019-12-01
3. Layout Editor	2019-12-01	—	2019-12-01

Proofreading Corrections  No Comments [PROOFING INSTRUCTIONS](#)

Kontak Editor

Hendra Stevani

Jurusan Farmasi Poltekkes kemenkes Makassar

email : hendra@poltekkes-mks.ac.id

08324585

[View My Stats](#)

Visitors

 114,599	 115
 2,619	 72
 275	 66
 185	 53
 135	 53





Petunjuk Registrasi

Petunjuk Submitte Artikel



Petunjuk Submitte Perbaikan Artikel

Sertifikat Sinta



USER

You are logged in as...
mulisukmawaty

- ▶ [My Journals](#)
- ▶ [My Profile](#)
- ▶ [Log Out](#)

AUTHOR

Submissions

- ▶ [Active \(0\)](#)
- ▶ [Archive \(1\)](#)
- ▶ [New Submission](#)