

DAFTAR PUSTAKA

- Akbari, M., Bakhshi, B., and Peerayeh, S.N. 2016. Particular Distribution of *Enterobacter cloacae* Strains Isolated from Urinary Tract Infection within Clonal Complexes. *Iran. Biomed. J.* 20 (1): 49-55
- Arpin, C., Labia, R., Dubois, V., Noury, P., Souquet, M., Quentin, C., 2002. TEM-80, a novel inhibitor-resistant β -lactamase in a clinical Isolate of *Enterobacter cloacae*. *Antimicrob. Agents Chemother.* 46, 1183–1189. <https://doi.org/10.1128/AAC.46.5.1183-1189.2002>
- Álvarez-Marín, R., Lepe, J.A., Gasch-Blasi, O., Rodríguez-Martínez, J.M., Calvo-Montes, J., Lara-Contreras, R., Martín-Gandul, C., Tubau-Quintano, F., Cano-García, M.E., Rodríguez-López, F., Rodríguez-Baño, J., Pujol-Rojo, M., Torre-Cisneros, J., Martínez-Martínez, L., Pascual-Hernández, Á., Jiménez-Mejías, M.E., 2021. Clinical characteristics and outcome of bacteraemia caused by *Enterobacter cloacae* and *Klebsiella aerogenes*: more similarities than differences. *J. Glob. Antimicrob. Resist.* 25, 351–358. <https://doi.org/10.1016/j.jgar.2021.04.008>
- Arora *et al.*, 2017. Drug Resistance in Bacteria, Fungi, Malaria, and Cancer. Springer International Publishing Switzerland
- Annavajhala, M.K., Simmonds, A.G., & Uhlemann, A.C. 2019. Multidrug-Resistant *Enterobacter cloacae* Complex Emerging as a Global, Diversifying Threat. *Frontiers in Microbiology.* 10 (44): 1-8
- Baraniak, A., Fiett, J., Sulikowska, A., Hryniewicz, W., Gniadkowski, M., 2002. Countrywide spread of CTX-M-3 extended-spectrum β -lactamase-producing microorganisms of the family Enterobacteriaceae in Poland. *Antimicrob. Agents Chemother.* 46, 151–159. <https://doi.org/10.1128/AAC.46.1.151-159.2002>
- Bermingham, N., Luettich, K. 2003. Polymerase Chain Reaction and its Application. Mini- Symposium: Advances in Laboratory Practice. Current Diagnostic Pathology. *Elsevier Science Ltd* 9: 1959- 164.
- Bonomo, R.A., 2017. *b-Lactamases: A Focus on Current Challenges*. Cold Spring Harbor Laboratory Press. 7: 1- 15
- Bush, K., 2010. Alarming β -lactamase-mediated resistance in multidrug-

resistant Enterobacteriaceae. *Curr. Opin. Microbiol.* 13, 558–564.
<https://doi.org/10.1016/j.mib.2010.09.006>

- Bustin, S.A., 2010. *The PCR Revolution: Basic Technologies and Applications*. Cambridge University Press: New York.
- Broomfield, R. J., Morgan, S.D., Khan, A., Stickler, D.J. 2009. Crystalline bacterial biofilm formation on urinary catheters by urease-producing urinary tract pathogens: a simple method of control. *Journal of Medical Microbiology*. 58: 1367– 1375
- Budayanti, N.S., Aisyah, D.N., Fatmawati, N.N.D., Tarini, N.M.A., Kozlakidis, Z., Adisasmito, W. 2020. Identification and Distribution of Pathogens in a Major Tertiary Hospital of Indonesia. *Frontiers in Public Health*. 7(395): 1-8
- Bunyan, I.A., and Alkhuzae, Q.A.J. 2017. Role of *ENTEROBACTER Cloacae* Isolated from Urinary Tract Infection in Stone Formation. *World Journal of Pharmaceutical Research*. 6 (7): 179-185
- Chou, D.W., Wu, S.L., Lee, C.T., 2018. Intensive care unit-acquired complicated necrotizing *pneumonia* caused by *Enterobacter cloacae*: A case report. *Intractable Rare Dis. Res.* 7, 283–286.
<https://doi.org/10.5582/irDr.2018.01116>
- Dai, W., Sun, S., Yang, P., Huang, S., Zhang, X., Zhang, L., 2013. Characterization of carbapenemases, extended spectrum β -lactamases and molecular epidemiology of carbapenem-non-susceptible *Enterobacter cloacae* in a Chinese hospital in Chongqing. *Infect. Genet. Evol.* 14, 1–7. <https://doi.org/10.1016/j.meegid.10.010>
- Davin-Regli, A., Lavigne, J.P., Pages, J.M. 2019. *Enterobacter* spp.: Update on Taxonomy, Clinical Aspects, and Emerging Antimicrobial Resistance. *Clinical Microbiology Reviews. ASM.* 32 (4): 1- 32
- de la Maza, L.M., Pezzlo, M.T., Bittencourt, C.E., Peterson, E.M., 2020. *Color Atlas of Medical Bacteriology*.
<https://doi.org/10.1128/9781683671077>
- Doucet-Populaire, F., Ghnassia, J.C., Bonnet, R., Sirot, J., 2000. First Isolation of a CTX-M-3-producing *Enterobacter cloacae* in France [2]. *Antimicrob. Agents Chemother.* 44, 3239–3240.
<https://doi.org/10.1128/AAC.44.11.3239-3240.2000>
- Dumarche, P., De Champs, C., Sirot, D., Chanal, C., Bonnet, R., Sirot, J., 2002. TEM derivative-producing *Enterobacter aerogenes* strains:

- Dissemination of a prevalent clone. *Antimicrob. Agents Chemother.* 46, 1128–1131. <https://doi.org/10.1128/AAC.46.4.1128-1131.2002>
- Dyachenko, P., Ziv, M., Kamil, S., Dodiuk-Gad, R., Chazan, B., Rozenman, D., 2005. Bullous haemorrhagic cellulitis caused by *Enterobacter cloacae* [1]. *J. Eur. Acad. Dermatology Venereol.* 19, 763–764. <https://doi.org/10.1111/j.1468-3083.2005.01246.x>
- Doern, C.D., 2018. *Pocket Guide to Clinical Microbiology 4th edition*. ASM Press: United States of America.
- Fatchiyah, S.W., Estri, L.A., Rahayu, S. 2011. *Biologi Molekuler. Prinsip dasar Analisis*. Penerbit Erlangga: Jakarta
- Gao, B., Li, X., Yang, F., Chen, W., Zhao, Y., Bai, G., Zhang, Z. 2019. Molecular Epidemiology and Risk Factors of Ventilator- Associated Pneumonia Infection Caused by Carbapenem-Resistant Enterobacteriales. *Frontiers in Pharmacology.* 10 (262): 1-7
- Giedraitiene, A., Vitkauskiene, A., Naginiene, R., Pavilionis, A., 2011. Antibiotic resistance mechanisms of clinically important bacteria. *Medicina (B. Aires).* 47, 137–146. <https://doi.org/10.3390/medicina47030019>
- Hasibuan, E., 2015. *Peranan Teknik Polymerase Chain Reaction (PCR) Terhadap Perkembangan Ilmu Pengetahuan*. Karya Tulis Ilmiah. Fakultas Kedokteran Universitas Sumatera Utara.
- Hoffmann, H., Stindl, S., Ludwig, W., Stumpf, A., Mehlen, A., Heesemann, J., Monget, D., Schleifer, K.H., Roggenkamp, A., 2005. Reassignment of *Enterobacter dissolvens* to *Enterobacter cloacae* as *E. cloacae* subspecies *dissolvens* comb. nov. and emended description of *Enterobacter asburiae* and *Enterobacter kobei*. *Syst. Appl. Microbiol.* 28, 196–205. <https://doi.org/10.1016/j.syapm.2004.12.010>
- Huang, S., Dai, W., Sun, S., Zhang, X., Zhang, L. 2012. Prevalence of Plasmid-Mediated Quinolone Resistance and Aminoglycoside Resistance Determinants among Carbapeneme Non-Susceptible *Enterobacter cloacae*. *journal Plos One.* 7(10): 1- 8
- Hugget, J., 2010. Polymerase chain reaction and infectious diseases, p 173– 188. In Bustin SA (ed),. *The PCR Revolution Basic Technologies and Applications*. Cambridge University Press: New York

- Isasti, G., Mora, L., García, V., Santos, J., Palacios, R., 2009. Community-acquired bacteremia and acute cholecystitis due to *Enterobacter cloacae*: A case report. *J. Med. Case Rep.* 3, 2–4. <https://doi.org/10.4076/1752-1947-3-7417>
- Jacoby, G.A. 2009. *AmpC beta Lactamases*. *Clinical Microbiology Reviews*. *ASM*. 22 (1):161-183
- Janasuta, P.B.R., Sukrama, D.M., Dwija, I.B.N.P. 2020. Pola Kepekaan Bakteri *Enterobacter sp.* yang diisolasi dari spesimen urin di RSUP SANGLAH. *Jurnal Medika Udayana*. 9 (1): 51-56
- Jin, C., Zhang, J., Wang, Q., Chen, H., Wang, X., Zhang, Y., Wang, H., 2018. Molecular characterization of carbapenem-resistant *Enterobacter cloacae* in 11 Chinese cities. *Front. Microbiol.* 9, 1–8. <https://doi.org/10.3389/fmicb.2018.01597>
- Kanamori, H., Yano, H., Hirakata, Y., Hirotani, A., Arai, K., Endo, S., et al., 2012. Molecular characteristics of extended-spectrum β -lactamases and qnr determinants in *Enterobacter* species from Japan. *PLoS ONE* 7 (6): 1-5
- Kang, C.I., Kim, S.H., Wan, B.P., Lee, K.D., Kim, H. Bin, Oh, M.D., Kim, E.C., Choe, K.W., 2004. Bloodstream infections caused by *Enterobacter* species: Predictors of 30-day mortality rate and impact of broad-spectrum cephalosporin resistance on outcome. *Clin. Infect. Dis.* 39, 812–818. <https://doi.org/10.1086/423382>
- Ki, V., Rotstein, C., 2008. Bacterial skin and soft tissue infections in adults: A review of their epidemiology, pathogenesis, diagnosis, treatment and site of care. *Can. J. Infect. Dis. Med. Microbiol.* 19, 173–184. <https://doi.org/10.1155/2008/846453>
- Kremer, A.N., Hoffmann, H., 2012. Subtractive hybridization yields a silver resistance determinant unique to nosocomial pathogens in the *Enterobacter cloacae* complex. *J. Clin. Microbiol.* 50, 3249–3257. <https://doi.org/10.1128/JCM.00885-12>
- Lee, H.K., Park, Y.J., Kim, J.Y., Chang, E., Cho, S.G., Chae, H.S., Kang, C.S., 2005. Prevalence of decreased susceptibility to carbapenems among *Serratia marcescens*, *Enterobacter cloacae*, and *Citrobacter freundii* and investigation of carbapenemases. *Diagn. Microbiol. Infect. Dis.* 52, 331–336. <https://doi.org/10.1016/j.diagmicrobio.2005.04.012>

- Lin, P.C., Lin, H.J., Guo, H.R., Chen, K.T., 2013. Epidemiological Characteristics of Lower Extremity Cellulitis after a Typhoon Flood. *PLoS One*. 8, 4–9. <https://doi.org/10.1371/journal.pone.0065655>
- Maftuchah, A.W., Zainudin, A. 2014. *Teknik Analisis Biologi Molekuler*. Deepublish: Yogyakarta
- Mahon, C.R., Lehman, D.C., Manuselis, G. 2015. *Textbook of Diagnostic Microbiology 5th edition*. Elsevier Publish: United States of America.
- Manzur, A., Tubau, F., Pujol, M., Calatayud, L., Dominguez, M.A., Peña, C., Sora, M., Gudiol, F., Ariza, J., 2007. Nosocomial outbreak due to extended-spectrum-beta-lactamase-producing *Enterobacter cloacae* in a cardiothoracic intensive care unit. *J. Clin. Microbiol.* 45, 2365–2369. <https://doi.org/10.1128/JCM.02546-06>
- Mezzatesta, M.L., Gona, F., and Stefani, S. 2012. *Enterobacter cloacae* complex: clinical impact and emerging antibiotic resistance. *Future Microbiol.* 7 (7): 887–902
- Miltgen, G., Bonnin, R.A., Avril, C., Benoit-Cattin, T., Martak, D., Leclaire, A., Traversier, N., Roquebert, B., Jaffar-Bandjee, M.C., Lugagne, N., Filleul, L., Subiros, M., de Montera, A.M., Cholley, P., Thouverez, M., Dortet, L., Bertrand, X., Naas, T., Hocquet, D., Belmonte, O., 2018. Outbreak of IMI-1 carbapenemase-producing colistin-resistant *Enterobacter cloacae* on the French island of Mayotte (Indian Ocean). *Int. J. Antimicrob. Agents* 52, 416–420. <https://doi.org/10.1016/j.ijantimicag.2018.05.015>
- Paraje, M.G., Barnes, A.I., Albesa, I., 2005. An *Enterobacter cloacae* toxin able to generate oxidative stress and to provoke dose-dependent lysis of leukocytes. *Int. J. Med. Microbiol.* 295, 109–116. <https://doi.org/10.1016/j.ijmm.2004.12.010>
- Persing H. *et al.*, 2016. *Molecular microbiology: diagnostic principles and practice* third edition. American Society Microbiology Press
- Poirel, L., Ros, A., Carrer, A., Fortineau, N., Carricajo, A., Berthelot, P., Nordmann, P. 2011. Cross-border transmission of OXA-48-producing *Enterobacter cloacae* from Morocco to France. *J. Antimicrob. Chemother.* 66, 1181–1182. doi: 10.1093/jac/ dkr023
- Qureshi, Z.A., Paterson, D.L., Pakstis, D.L., Adams-Haduch, J.M., Sandkovsky, G., Sordillo, E., Polsky, B., Peleg, A.Y., Bhussar, M.K., Doi, Y., 2011. Risk factors and outcome of extended-spectrum β -lactamase-producing *Enterobacter cloacae* bloodstream infections. *Int.*

J. Antimicrob. Agents 37, 26–32.
<https://doi.org/10.1016/j.ijantimicag.2010.09.009>

Radji, M., Fauziah, S., Aribinuko, N., 2011. Antibiotic sensitivity pattern of bacterial pathogens in the intensive care unit of Fatmawati Hospital, Indonesia. *Asian Pac. J. Trop. Biomed.* 1, 39–42.
[https://doi.org/10.1016/S2221-1691\(11\)60065-8](https://doi.org/10.1016/S2221-1691(11)60065-8)

Rousseau *et al.*, 2001. Efficiency of Cefepime in Postoperative Meningitis Attributable to *Enterobacter aerogenes*. *The Journal of Trauma and Acute Care Surgery.* 50 (5): 971

Ryan, J.K., Ray, C.J., Nafees, A., Drew, W.L., Lagunoff, M., Pottinger, P., Reller, L.B., Sterling, C.R. 2018. *Sherris Medical Microbiology 7th edition*. Mcgraw Hill Education Publisher: United States of America.

Rosana, Y., Ocviyanti, D., Halim, M., Harlinda, F.Y., Amran, R., Akbar, W. 2020. Urinary Tract Infections among Indonesian Pregnant Women and Its Susceptibility Pattern. *Hindawi Infectious Diseases in Obstetrics and Gynecology.* (9681632): 1-7

Simi, S., Carbonell, G. V., Falcón, R.M., Gatti, M.S.V., Joazeiro, P.P., Darini, A.L., Yano, T., 2003. A low molecular weight enterotoxigenic hemolysin from clinical *Enterobacter cloacae*. *Can. J. Microbiol.* 49, 479–482.
<https://doi.org/10.1139/w03-060>

Scott, B., and Tille, P.M., 2014. *Bailey and Scott's Diagnostic Microbiology 13th edition*. Elsevier Publisher: United States of America

Shulman, L., Ost, D., 2005. Managing infection in the critical care unit: How can infection control make the ICU safe? *Crit. Care Clin.* 21, 111–128.
<https://doi.org/10.1016/j.ccc.2004.10.002>

Soejadi., 2008. *Bioteknologi Kesehatan*. Penerbit Kanisius: Yogyakarta. 131-143

Tamma, P.D., Doi, Y., Bonomo, R.A., Johnson, J.K., Simner, P.J., 2019. A Primer on AmpC β -Lactamases: Necessary Knowledge for an Increasingly Multidrug-resistant World. *Clin. Infect. Dis.* 69, 1446–1455.
<https://doi.org/10.1093/cid/ciz173>

Teo, J.W.P., La, M. Van, Krishnan, P., Ang, B., Jureen, R., Lin, R.T.P., 2013. *Enterobacter cloacae* producing an uncommon class A carbapenemase, IMI-1, from Singapore. *J. Med. Microbiol.* 62, 1086–1088. <https://doi.org/10.1099/jmm.0.053363-0>

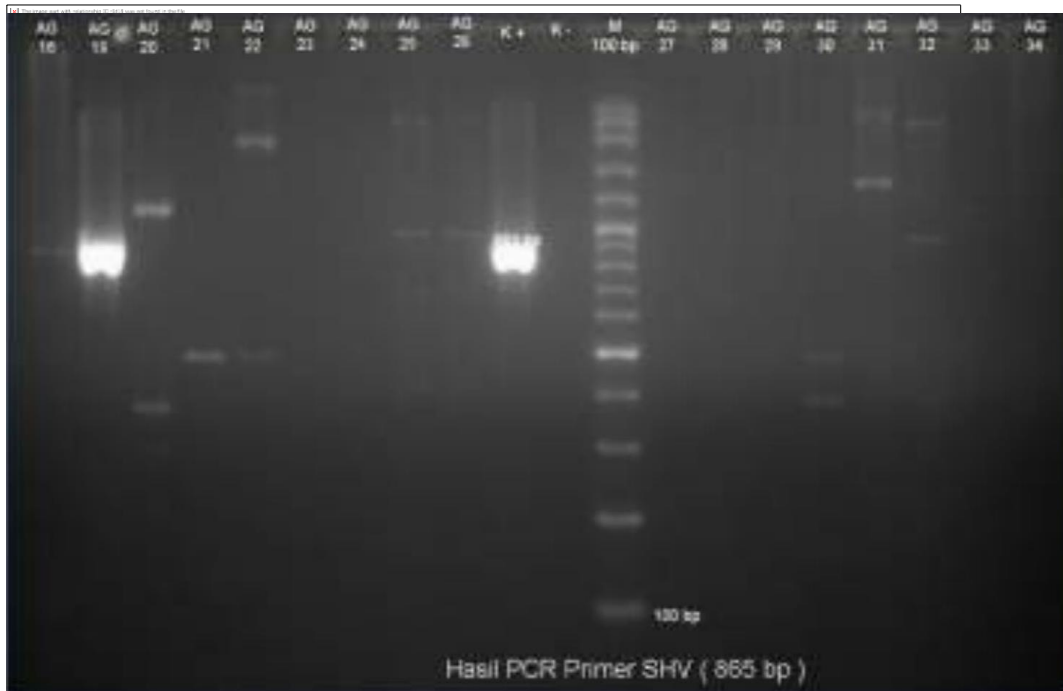
- Wang, S., Xiao, S.Z., Gu, F.F., Tang, J., Guo, X.K., Ni, Y.X., Qu, J.M., Han, L.Z., 2017. Antimicrobial susceptibility and molecular epidemiology of clinical *Enterobacter cloacae* bloodstream Isolates in Shanghai, China. *PLoS One* 12, 1–12. <https://doi.org/10.1371/journal.pone.0189713>
- Wittwer, C.T., Rasmussen, R.P., Ririe, K.M. 2010. Rapid polymerase chain reaction and melting analysis, p 48–69. In Bustin SA (ed), *The PCR Revolution: Basic Technologies and Applications*. Cambridge University Press: New York
- Yang, F.C., Yan, J.J., Hung, K.H., Wu, J.J., 2012. Characterization of ertapenem-resistant *Enterobacter cloacae* in a Taiwanese University Hospital. *J. Clin. Microbiol.* 50, 223–226.
- Yuwono, T., 2006. *Teori dan aplikasi polymerase chain reaction*. Penerbit Andi: Yogyakarta

Lampiran 1. Hasil elektroforesis

Gen SHV-12 sampel AG 1- AG17



Gen SHV-12 sampel AG 18- AG 34



Gen SHV-12 sampel AG 35- AG 47



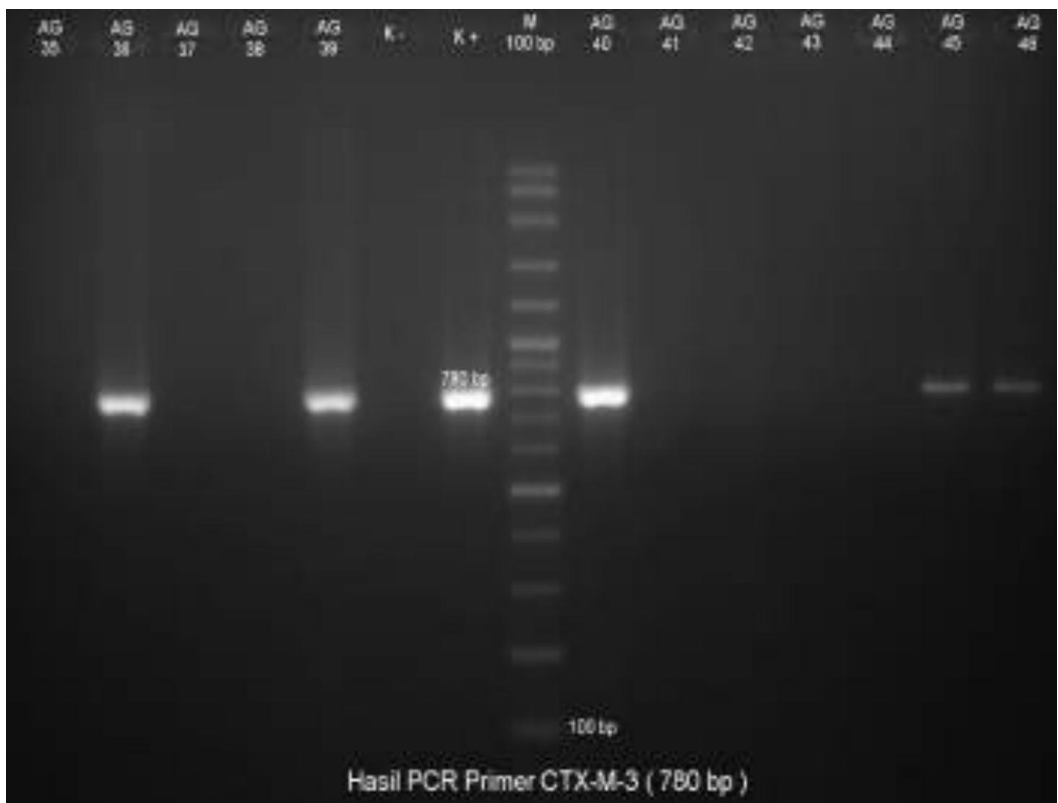
Gen CTX M-3 sampel AG 1- AG 17



Gen CTX M-3 sampel AG 18- AG 34



Gen CTX M-3 sampel AG 35- AG 47



Lampiran 2. Dokumentasi penelitian



Koloni bakteri *Enterobacter cloacae* pada media *MacConkey* agar



Proses *running* elektroforesis



Isolat bakteri *E. cloacae* pada TSI agar (*Acid/acid*) dan SIM agar



Isolat bakteri *E. cloacae* pada TSI (Alkali/*acid*) dan SIM agar

Lampiran 3. Hasil identifikasi *E. cloacae* secara fenotip dan genotip

No	Kode Sampel	Vitek 2® <i>E. cloacae</i>	Resistensi antibiotik	Gen SHV-12	Gen CTX M-3	Kesimpulan hasil
1.	AG 01	teridentifikasi	<i>ampicilin</i> , <i>piperacilin tazobactam</i> , <i>ceftazidime</i> , <i>ceftriaxone</i> , <i>ampicillin sulbactam</i> , <i>ertapenem</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
2.	AG 02	teridentifikasi	<i>ampicilin</i> , <i>amoxicillin clavulanat</i> , <i>ceftazidime</i> , <i>ceftriaxone</i> , <i>ciprofloxacin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
3.	AG 03	teridentifikasi	<i>cefotaxime</i>	positif	positif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12 dan CTX M-3
4.	AG 04	teridentifikasi	<i>cefotaxime</i> , <i>ceftazidime</i> , <i>ceftriaxone</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
5.	AG 05	teridentifikasi	<i>ampicilin</i> , <i>amoxicillin clavulanat</i> , <i>cefoxitin</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3

6.	AG 06	teridentifikasi	Tidak terdapat resistansi terhadap antibiotik	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
7.	AG 07	teridentifikasi	<i>ampicilin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
8.	AG 08	teridentifikasi	tidak terdapat resistansi terhadap antibiotik	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
9.	AG 09	teridentifikasi	<i>ampicilin</i> , <i>ampicilin sulbactam</i> , <i>cefazolin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
10.	AG 10	teridentifikasi	<i>ampicilin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
11.	AG 11	teridentifikasi	<i>ampicilin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
12.	AG 12	teridentifikasi	<i>ceftazidime</i> , <i>ceftriaxone</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3

13	AG 13	teridentifikasi	<i>amoxicillin clavulanat, levofloxacin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
14	AG 14	teridentifikasi	<i>cefotaxime, ceftriaxone, gentamycin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
15	AG 15	teridentifikasi	<i>ampicilin, amoxicillin clavulanate, piperacilin tazobactam, ceftazidime, ceftriaxone,</i>	positif	positif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12 dan CTX M-3

No	Kode Sampel	Vitek 2® <i>E. cloacae</i>	Resistensi antibiotik	Gen SHV-12	Gen CTX M-3	Kesimpulan hasil
16	AG 16	teridentifikasi	tidak terdapat resistansi terhadap antibiotik	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
17	AG 17	teridentifikasi	<i>ampicilin, cefoperazone sulbactam, meropenem</i>	positif	negatif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12

18	AG 18	teridentifikasi	<i>ampicilin, amoxicillin clavulanate</i>	positif	negatif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12
19	AG 19	teridentifikasi	<i>ceftriaxone</i>	positif	positif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12 dan CTX M-3
20	AG 20	teridentifikasi	tidak terdapat resistansi terhadap antibiotik	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
21	AG 21	teridentifikasi	<i>cefotaxime, ceftriaxone, tobramycin</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
22	AG 23	teridentifikasi	<i>ampicilin, ceftazidime, ceftriaxone, ampicilin sulbactam, cefazolin, cefepime, aztreonam</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
23	AG 24	teridentifikasi	<i>ampicilin, ampicilin sulbactam, cefazolin</i>	Negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
24	AG 25	teridentifikasi	<i>ampicilin, ceftazidime, ceftriaxone, ampicilin sulbactam, cefazolin, cefepime, aztreonam</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
25	AG 26	teridentifikasi	<i>ampicilin, ceftazidime, ceftriaxone, ampicilin sulbactam, cefazolin,</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3

			<i>cefepime, aztreonam</i>			
26	AG 27	teridentifikasi	<i>ampicilin, piperacilin sulbactam, ceftazidime, ceftriaxone, ampicilin sulbactam, cefazolin, Aztreonam, ertapenem,</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
27	AG 28	teridentifikasi	<i>ampicilin, amoxicillin clavulanate</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
28	AG 29	teridentifikasi	<i>ampicilin, amoxicillin clavulanate, ampicilin sulbactam, cefazolin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
29	AG 30	teridentifikasi	<i>ampicilin, ampicilin sulbactam, cefazolin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3

No	Kode sampel	Vitek 2® <i>E. cloacae</i>	Resistensi antibiotik	Gen SHV-12	Gen CTX M-3	Kesimpulan hasil
30.	AG 31	teridentifikasi	<i>ampicilin, piperacilin tazobactam, ceftazidime, ceftriaxone, gentamycin, ampicilin sulbactam, cefazolin, cefepime, aztreonam</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3

31.	AG 32	teridentifikasi	<i>ampicilin, ceftazidime, ampicilin, sulbactam, aztreonam</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
32.	AG 33	teridentifikasi	<i>ampicilin, clavulanate, tazobactam, cefotaxime, ceftriaxone</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
33.	AG 34	teridentifikasi	<i>ampicilin, clavulanate, gentamycin, sulbactam, aztreonam</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
34.	AG 35	teridentifikasi	<i>cefotaxime, ceftriaxone, imipenem, meropenem</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
35.	AG	teridentifikasi	<i>ampicilin, gentamycin, sulbactam, aztreonam, trimethoprim sulfamethoxazole</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
36.	AG 37	teridentifikasi	<i>ampicilin, sulbactam, ciprofloxacin, nitrofurantoin</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
37.	AG 38	teridentifikasi	<i>ampicilin, sulbactam</i>	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
38.	AG 39	teridentifikasi	tidak terdapat resistansi terhadap antibiotik	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
39.	AG 40	teridentifikasi	<i>ampicilin, sulbactam, tazobactam, ceftriaxone, ertapenem</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3

40.	AG 41	teridentifikasi	tidak terdapat resistansi terhadap antibiotik	positif	negatif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12
41.	AG 42	teridentifikasi	tidak terdapat resistansi terhadap antibiotik	negatif	negatif	teridentifikasi <i>E. cloacae</i> , negatif gen SHV-12 dan CTX M-3
42.	AG 43	teridentifikasi	<i>ampicilin, sulbactam</i> <i>ampicilin</i>	negatif	positif	teridentifikasi <i>E. cloacae</i> , positif gen CTX M-3
43.	AG 44	teridentifikasi	<i>ampicilin, sulbactam</i> <i>ampicilin</i>	positif	positif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12 dan CTX M-3
44.	AG 45	teridentifikasi	<i>ampicilin, sulbactam, cefazolin</i> <i>ampicilin</i>	positif	positif	teridentifikasi <i>E. cloacae</i> , positif gen SHV-12 dan CTX M-3

Lampiran 4. Hasil identifikasi *E. cloacae* pada *MacConkey* agar, TSI agar, dan SIM agar

No.	Kode Label	Gambaran koloni pada <i>MacConkey</i> agar	Triple Sugar Iron (TSI) agar	<i>Sulfur Indol Motilitas (SIM)</i> agar
1.	AG 01	koloni <i>pink</i> , <i>mukoid</i> , batas tidak tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
2.	AG 02	koloni besar, <i>pink</i> , <i>mukoid</i> , batas tegas	<i>slant</i> = <i>acid</i> <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
3.	AG 03	koloni besar, <i>pink</i> , <i>mukoid</i>	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
4.	AG 04	koloni kecil, <i>pink</i> , <i>mukoid</i> , batas tegas	<i>slant</i> = <i>acid</i> <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
5.	AG 05	koloni besar, <i>pink</i> , <i>mukoid</i> , batas tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif

6.	AG 06	koloni kecil, <i>pink</i> , <i>mukoid</i>	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indo</i> = negatif motilitas= positif
7.	AG 07	koloni besar, <i>pink</i> , <i>mukoid</i> , batas tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indo</i> = negatif motilitas= positif
8.	AG 08	koloni besar, <i>pink</i> , <i>mukoid</i> , batas tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indo</i> = negatif motilitas= positif
9.	AG 09	koloni <i>pink</i> , <i>mukoid</i> , batas tidak tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indo</i> = negatif motilitas= positif
10.	AG 10	koloni kecil, <i>pink</i> , <i>mukoid</i>	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indo</i> = negatif motilitas= positif
11.	AG 11	koloni <i>pink</i> , <i>mukoid</i> , batas tidak tegas	<i>slant</i> = <i>acid</i> <i>butt</i> = <i>acid</i> gas= positif	sulfur= negatif <i>indo</i> = negatif motilitas= positif

			H ₂ S= negatif	
12.	AG 12	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
13.	AG 13	koloni besar, <i>pink</i> , <i>mukoid</i> , batas tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
14.	AG 14	koloni besar, <i>pink</i> , <i>mukoid</i>	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
15.	AG 15	koloni kecil, bening, <i>mukoid</i>	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
16.	AG 16	koloni <i>pink</i> , besar, <i>mukoid</i> , batas tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
17.	AG 17	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i>	sulfur= negatif <i>indol=</i> negatif

			gas= positif H ₂ S= negatif	motilitas= positif
18.	AG 18	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
19.	AG 19	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
20.	AG 20	koloni <i>pink, besar</i> <i>mukoid</i> , batas tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
21.	AG 21	koloni <i>pink, mukoid</i> , batas tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
22.	AG 23	koloni <i>pink, mukoid</i> , besar	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif

23.	AG 24	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol= negatif</i> motilitas= positif
24.	AG 25	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol= negatif</i> motilitas= positif
25.	AG 26	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol= negatif</i> motilitas= positif
26.	AG 27	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol= negatif</i> motilitas= positif
27.	AG 28	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol= negatif</i> motilitas= positif
28.	AG 29	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif	sulfur= negatif <i>indol= negatif</i> motilitas= positif

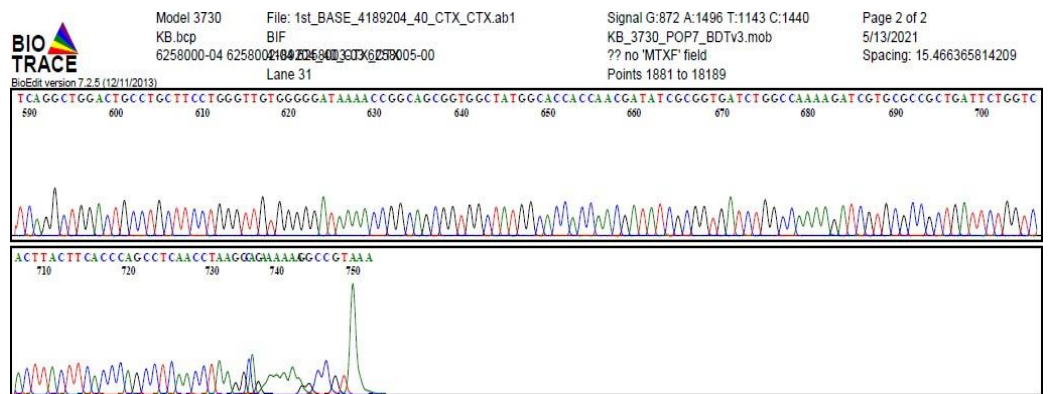
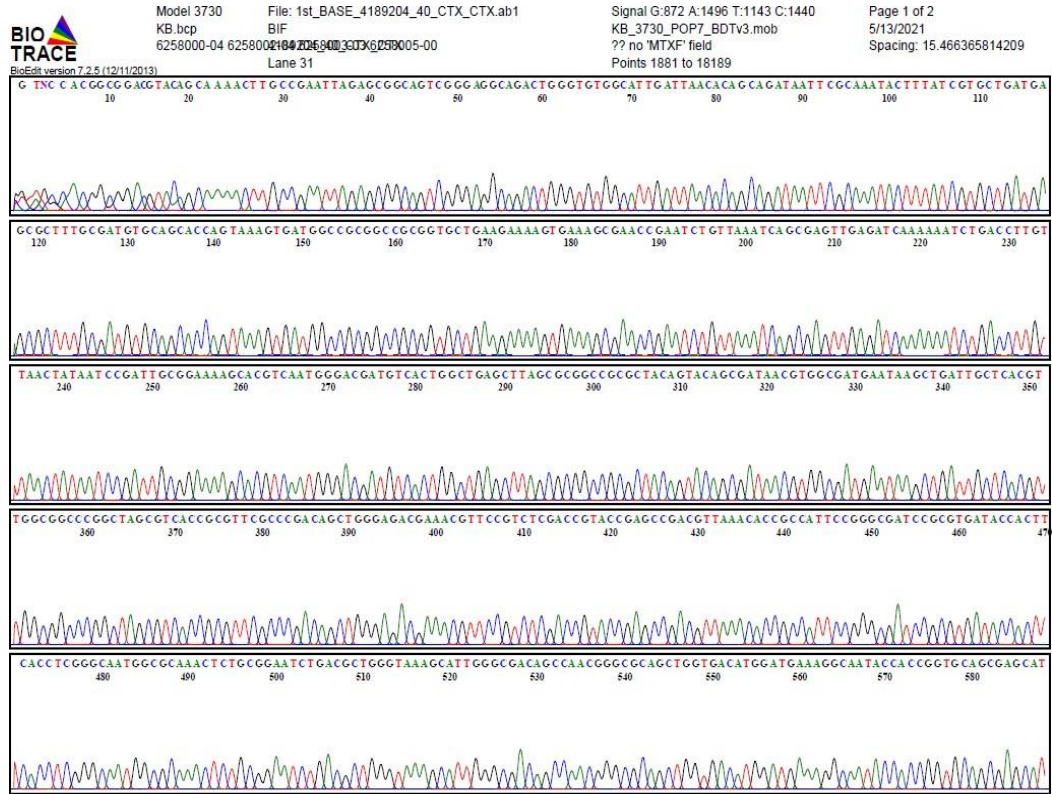
			H ₂ S= negatif	
29.	AG 30	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
30.	AG 31	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
31.	AG 32	koloni <i>mukoid</i> , kecil, batas tidak tegas	<i>slant= alkali</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
32.	AG 33	koloni <i>mukoid, pink</i> , koloni besar	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
33.	AG 34	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol=</i> negatif motilitas= positif
34.	AG 35	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant= acid</i> <i>butt=acid</i>	sulfur= negatif <i>indol=</i> negatif

			gas= positif H ₂ S= negatif	motilitas= positif
35.	AG 36	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant</i> = alkali <i>butt</i> =acid gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
36.	AG 37	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant</i> = acid <i>butt</i> =acid gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
37.	AG 38	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant</i> = alkali <i>butt</i> =acid gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
38.	AG 39	koloni <i>pink, mukoid</i> , koloni besar, batas tidak tegas	<i>slant</i> = alkali <i>butt</i> =acid gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
39.	AG 40	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant</i> = alkali <i>butt</i> =acid gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif

40.	AG 41	koloni <i>pink, mukoid</i> , batas tidak tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
41.	AG 42	koloni <i>mukoid</i> , bening, kecil	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
42.	AG 43	koloni <i>mukoid</i> , kecil	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
43.	AG 44	koloni <i>pink, mukoid</i> , besar	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif
44.	AG 45	koloni <i>pink, mukoid</i> , besar, batas tegas	<i>slant</i> = alkali <i>butt</i> = <i>acid</i> gas= positif H ₂ S= negatif	sulfur= negatif <i>indol</i> = negatif motilitas= positif

Lampiran 5. Hasil *sequencing* gen CTX M-3 dan gen SHV-12

5.1 *sequencing* gen CTX M-3

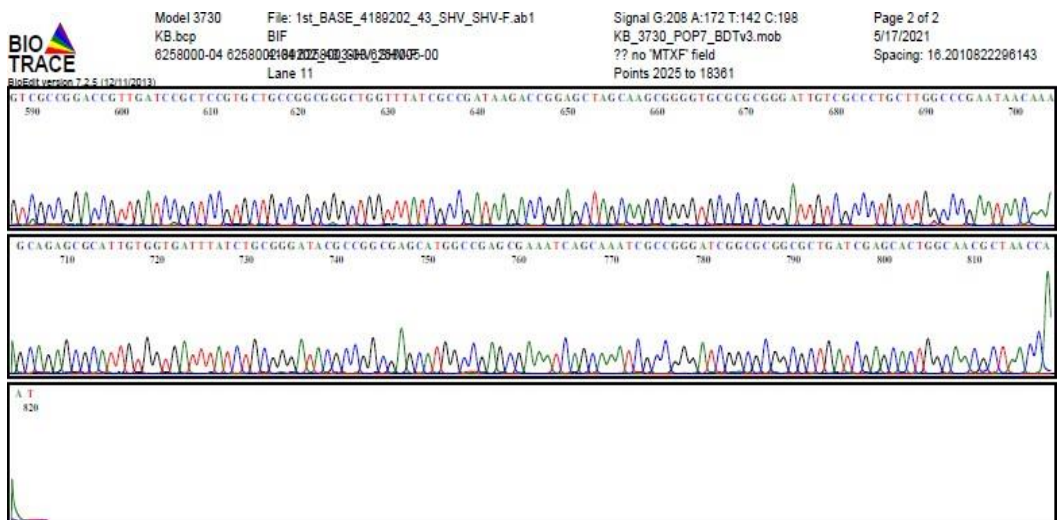
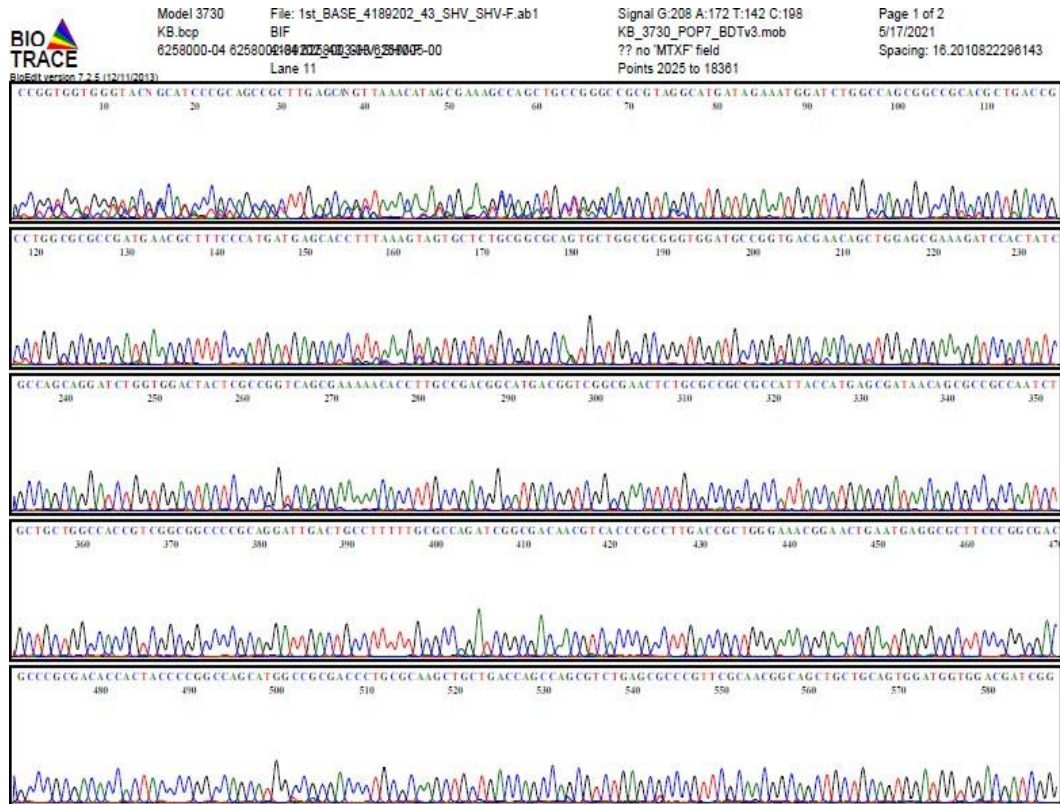


gen CTX M-3

Sequences producing significant alignments:									
Select for downloading or viewing reports	Description	Scientific Name	Max Score	Total Score	Query Coverage	E value	Per. Ident	Acc. Len	Accession
<input type="checkbox"/> Select seq MK736669.1	Enterobacter cloacae strain EclC2185 plasmid pEclC2185CTXM15, complete sequence	Enterobacter cloacae	1354	1354	97%	0.0	99.86%	305912	MK736669.1
<input type="checkbox"/> Select seq MK559056.1	Enterobacter cloacae strain CH8(2) plasmid CTX-M family beta-lactamase (blaCTX-M) gene, partial cds	Enterobacter cloacae	1354	1354	97%	0.0	99.73%	873	MK559056.1
<input type="checkbox"/> Select seq CP040827.1	Enterobacter cloacae strain NH77 chromosome, complete genome	Enterobacter cloacae	1354	1354	97%	0.0	99.86%	5040532	CP040827.1
<input type="checkbox"/> Select seq MG844171.1	Enterobacter cloacae strain ESP110 plasmid insertion sequence ISEcp1 ISEcp1 transposase (tnpA) gene, complete cds; and class A extended-spectrum beta-lactamase CTX-M-15 (blaCTX-M) and tryptophan synthase subunit beta-like protein genes, complete cds	Enterobacter cloacae	1354	1354	97%	0.0	99.73%	2959	MG844171.1
<input type="checkbox"/> Select seq KY346922.1	Enterobacter cloacae strain ZZEN540 CTX-M-15 beta-lactamase gene, complete cds	Enterobacter cloacae	1354	1354	97%	0.0	99.73%	876	KY346922.1
<input type="checkbox"/> Select seq KY346921.1	Enterobacter cloacae strain ZZEN513 CTX-M-15 beta-lactamase gene, complete cds	Enterobacter cloacae	1354	1354	97%	0.0	99.73%	876	KY346921.1

Sequences producing significant alignments:									
Select for downloading or viewing reports	Description	Scientific Name	Max Score	Total Score	Query Coverage	E value	Per. Ident	Acc. Len	Accession
<input type="checkbox"/> Select seq KY346934.1	Enterobacter cloacae strain ZZEN521 CTX-M-3 beta-lactamase gene, complete cds	Enterobacter cloacae	1349	1349	97%	0.0	99.59%	876	KY346934.1
<input type="checkbox"/> Select seq MF062700.1	Enterobacter cloacae strain T5282 plasmid pT5282-CTXM, complete sequence	Enterobacter cloacae	1349	1349	97%	0.0	99.73%	60206	MF062700.1
<input type="checkbox"/> Select seq KX015668.1	Enterobacter cloacae strain CY01 plasmid pCY-CTX, complete sequence	Enterobacter cloacae	1349	1349	97%	0.0	99.73%	116700	KX015668.1
<input type="checkbox"/> Select seq AP022128.1	Enterobacter cloacae plasmid pWP5-S18-CRE-02 2 DNA, complete genome, strain: WP5-S18-CRE-02	Enterobacter cloacae	1349	1349	97%	0.0	99.59%	92491	AP022128.1
<input type="checkbox"/> Select seq HQ214050.1	Enterobacter cloacae strain S-595 plasmid insertion sequence ISEcp1, partial sequence; and beta-lactamase CTX-M-3 (blaCTX-M-3) and hypothetical protein genes, complete cds	Enterobacter cloacae	1349	1349	97%	0.0	99.59%	1498	HQ214050.1
<input type="checkbox"/> Select seq HQ214046.1	Enterobacter cloacae strain S-361 plasmid IncF_{II}/L/M insertion sequence ISEcp1 transposase (tnpA) gene, complete cds; and beta-lactamase CTX-M-3 (blaCTX-M-3) and hypothetical protein genes, complete cds	Enterobacter cloacae	1349	1349	97%	0.0	99.59%	3022	HQ214046.1
<input type="checkbox"/> Select seq AY954529.1	Enterobacter cloacae plasmid pEC002 beta-lactamase CTX-M-22 (blaCTX-M-22) gene, complete cds	Enterobacter cloacae	1349	1349	97%	0.0	99.59%	876	AY954529.1

5.2 sequencing gen SHV-12



gen SHV-12

Sequences producing significant alignments:									
Select for downloading or viewing reports	Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. Ident	Acc. Len	Accession
<input type="checkbox"/> Select seq MH399264.1	Enterobacter cloacae strain RJ702 plasmid pIMP26 complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.50%	329420	MH399264.1
<input type="checkbox"/> Select seq MH460797.1	Enterobacter cloacae strain KMB37 extended spectrum beta-lactamase SHV-12 (blaSHV) gene, blaSHV-12 allele, complete cds	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	861	MH460797.1
<input type="checkbox"/> Select seq MH460793.1	Enterobacter cloacae strain KSR2 extended spectrum beta-lactamase SHV-12 (blaSHV) gene, blaSHV-12 allele, complete cds	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	861	MH460793.1
<input type="checkbox"/> Select seq MF415608.1	Enterobacter cloacae strain hhy03 plasmid pNDM-BJ03, complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.50%	60125	MF415608.1
<input type="checkbox"/> Select seq MF402906.1	Enterobacter cloacae strain ZUECL4 extended-spectrum beta-lactamase SHV-12 (blaSHV-12) gene, complete cds	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	861	MF402906.1
<input type="checkbox"/> Select seq MG653177.1	Enterobacter cloacae strain BVT29 extended spectrum beta lactamase (SHV) gene, SHV-12 allele, complete cds	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	861	MG653177.1
<input type="checkbox"/> Select seq MG653176.1	Enterobacter cloacae strain BVT22 extended spectrum beta lactamase (SHV) gene, SHV-12 allele, complete cds	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	861	MG653176.1

Sequences producing significant alignments:									
Select for downloading or viewing reports	Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. Ident	Acc. Len	Accession
<input type="checkbox"/> Select seq MF344583.1	Enterobacter cloacae strain N1863 plasmid pN1863-HI2, complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.50%	349834	MF344583.1
<input type="checkbox"/> Select seq KY270852.1	Enterobacter cloacae strain T5282 plasmid pT5282-mpH_A, complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	282423	KY270852.1
<input type="checkbox"/> Select seq KY296103.1	Enterobacter cloacae strain 13E169 plasmid pHN84NDM, complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	653771	KY296103.1
<input type="checkbox"/> Select seq NG_050590.1	Enterobacter cloacae CRE727 pNDM-HF727 blaSHV gene for class A extended-spectrum beta-lactamase SHV-12, complete CDS	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	1061	NG_050590.1
<input type="checkbox"/> Select seq KP975077.1	Enterobacter cloacae strain MRSN17626 plasmid pMRVIM0813, complete sequence	Enterobacter cloacae	1450	2894	97%	0.0	99.50%	311662	KP975077.1
<input type="checkbox"/> Select seq KF976405.1	Enterobacter cloacae strain CRE727 plasmid pNDM-HF727, complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	54035	KF976405.1
<input type="checkbox"/> Select seq AP022520.1	Enterobacter cloacae STN0717-73 plasmid pSTN0717-73-1 DNA, complete sequence	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	266476	AP022520.1
<input type="checkbox"/> Select seq	Enterobacter cloacae strain B02/0225 beta-lactamase (blaSHV) gene, partial cds	Enterobacter cloacae	1450	1450	97%	0.0	99.37%	860	JN037849.1



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN KESEHATAN
RSPTN UNIVERSITAS HASANUDDIN
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR



Sekretariat : Lantai 2 Gedung Laboratorium Terpadu
JL. PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.

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REKOMENDASI PERSETUJUAN ETIK
Nomor : 149/UN4.6.4.5.31/ PP36/ 2021

Tanggal: 8 Maret 2021

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

No Protokol	UH21020124		No Sponsor	
Peneliti Utama	dr. Donnaries Hangga Kusuma		Protokol	
Judul Peneliti	Distribusi gen CTX M-3 & SHV-12 pada isolate Enterobactercloacae di RSUH dan RWS Makassar			
No Versi Protokol	1	Tanggal Versi	2 Maret 2021	
No Versi PSP			Tanggal Versi	
Tempat Penelitian	RS Universitas Hasanuddin dan RS Dr. Wahidin Sudirohusodo Makassar			
Jenis Review	<input checked="" type="checkbox"/>	Exempted	Masa Berlaku	Frekuensi review
	<input type="checkbox"/>	Expedited	8 Maret 2021	lanjutan
	<input type="checkbox"/>	Fullboard Tanggal	sampai	
			8 Maret 2022	
Ketua Komisi Etik Penelitian Kesehatan FKUH	Nama	Prof.Dr.dr. Suryani As'ad, M.Sc.,Sp.GK (K)		Tanda tangan
Sekretaris Komisi Etik Penelitian Kesehatan FKUH	Nama	dr. Agussalim Bukhari, M.Med.,Ph.D.,Sp.GK (I)		Tanda tangan

Kewajiban Peneliti Utama:

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