

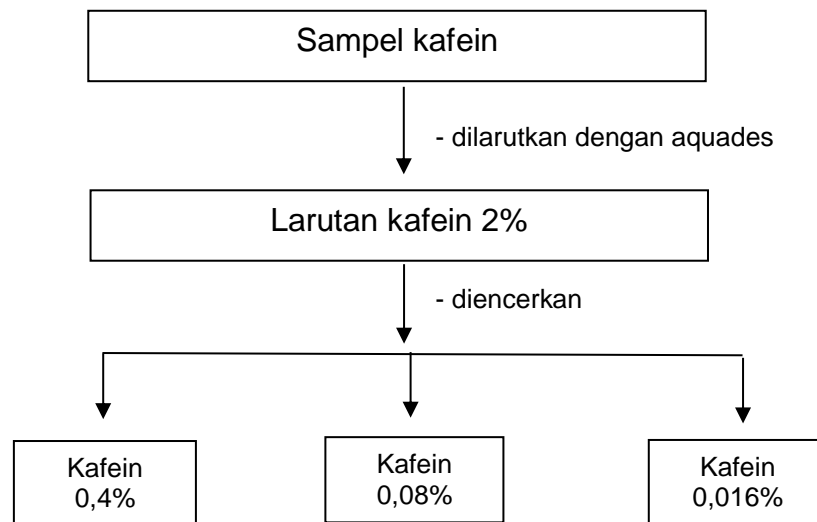
## DAFTAR PUSTAKA

- Amelia, S., Wahyuni, D. D., Yunita, R., & Rozi, M. F. (2021). The Active Surveillance of *Staphylococcus aureus* using Polymerase Chain Reaction-based Identification Method among Hospitalized-patient of Haji Adam Malik General Hospital, Medan, Indonesia. *Open Access Macedonian Journal of Medical Sciences*, 9(A), 622-625.
- Buchon, N.; Poidevin, M.; Kwon, H.-M.; Guillou, A.; Sottas, V.; Lee, B.-L.; Lemaitre, B. (2009). A single modular serine protease integrates signals from pattern-recognition receptors upstream of the *Drosophila* Toll pathway. *Proceedings of the National Academy of Sciences*, 106(30), 12442–12447. doi:10.1073/pnas.0901924106
- Corby-Harris, V., Habel, K. E., Ali, F. G., & Promislow, D. E. L. (2007). Alternative measures of response to *Pseudomonas aeruginosa* infection in *Drosophila melanogaster*. *Journal of evolutionary biology*, 20(2), 526-533.
- Esimone, C. O., Okoye, F. B., Nworu, C. S., & Agubata, C. O. (2008). In vitro interaction between caffeine and some penicillin antibiotics against *Staphylococcus aureus*. *Tropical Journal of Pharmaceutical Research*, 7(2), 969-974.
- Garibyan, L., & Avashia, N. (2013). Polymerase chain reaction. *The Journal of Investigative Dermatology*, 133(3), 1–4. <https://doi.org/10.1038/jid.2013.1>
- Garrity, G.M., Lilburn, J.R. Cole, S.H. Harrison, J. Euzaby, and B.J. Tindall. 2007. *Taxonomic Outline of the Bacteria and Archaea, Release 7.7*. Michigan : Michigan State University Board of Trustees. P. 364, 464.
- Hadi, Mochammad. (2009) 'Biologi Insecta Entomologi'. Yogyakarta: Graha Ilmu.
- Huaping Tang; Zakaria Kambris; Bruno Lemaitre; Carl Hashimoto (2008). A *Serpin* that Regulates Immune Melanization in the Respiratory System of *Drosophila*. , 15(4), 0–626. doi:10.1016/j.devcel.2008.08.017
- Jawetz, Melnick, Adelberg. *Medical Microbiology 28th Edition*. New York: McGraw – Hill. 2019. h.232 – 235

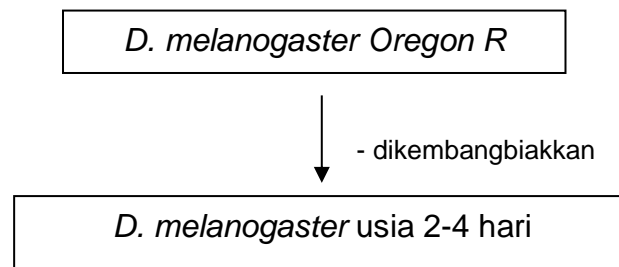
- Jiang, F.M., Ming, J.H., Hong, H.R. dan Li Wang. (2015). Molecular Cloning and Characterization of a new C-type Lysozyme Gene From Yak Mammary Tissue. *Asian Australas*, 28 (12): 1774-1783.
- Joegijantoro, R. 2019. *Penyakit Infeksi*. Intimedia. Malang
- Joshi, M., & Deshpande, J. D. (2010). Polymerase chain reaction: methods, principles and application. *International Journal of Biomedical Research*, 2(1), 81-97.
- Kandinan, A. 2010. *Mengenal lebih dekat tanaman pengendalian alat buah*, PT. Agromedia Pustaka : Jakarta
- Kementerian Kesehatan RI. 2021. *Peraturan Menteri Kesehatan Republik Indonesia Nomor 28 Tahun 2021 Tentang Pedoman Penggunaan Antibiotik*. Jakarta. Departemen Kesehatan RI.
- Lowy, Franklin D. (1998). *Staphylococcus aureus Infections*. , 339(8), 520–532. doi:10.1056/nejm199808203390806
- Maramis, R. K. (2013). Analisis kafein dalam kopi bubuk di Kota Manado menggunakan spektrofotometri UV-VIS. *Pharmacon*, 2(4).
- Mohammed, M.J. and Al-Bayati, F.A. 2009. Isolation, identification and purification of caffeine from Coffea Arabica L. and Camellia sinensis L.: A combination antibacterial study. *International Journal of Green Pharmacy* 3 (1): 52-57.
- Nainu, F. 2018. Review : Penggunaan Drosophila melanogaster Sebagai Organisme Model Dalam Penemuan Obat. *J. Farm. Galen*. 4, 50–67.
- Nainu, F., Bahar, M. A., Sartini, S., Rosa, R. A., Rahmah, N., Kamri, R. A., Rumata, N.R., Yulianty, R., & Wahyudin, E. (2022). Proof-of-Concept Preclinical Use of Drosophila melanogaster in the Initial Screening of Immunomodulators. *Scientia Pharmaceutica*, 90(1), 11.
- Nainu, F., Djide, M. N., Subehan, S., Sartini, S., Roska, T. P., Salim, E., & Kuraishi, T. (2020). Protective Signatures of Roselle (Hibiscus sabdariffa L.) Calyx Fractions against Staphylococcus aureus in Drosophila Infection Model. *HAYATI Journal of Biosciences*, 27(4), 306-306.
- Odonkor, S. T., & Addo, K. K. (2011). Bacteria resistance to antibiotics: recent trends and challenges. *Int J Biol Med Res*, 2(4), 1204-1210.

- Oliveira, D., Borges, A., & Simões, M. (2018). Staphylococcus aureus toxins and their molecular activity in infectious diseases. *Toxins*, 10(6), 252.
- Otto, Michael (2014). *Staphylococcus aureus* toxins. *Current Opinion in Microbiology*, 17(), 32–37. doi:10.1016/j.mib.2013.11.004
- Schleifer, K. (2009). Phylum XIII. Firmicutes Gibbons and Murray 1978, 5 (Firmacutes [sic] Gibbons and Murray 1978, 5). In: De Vos P. et al. (eds) Bergey's Manual® of Systematic Bacteriology. *Bergey's Manual of Systematic Bacteriology: Volume 3: The Firmicutes*, 3, LII, 1450. <http://moscow.sci-hub.bz/2f9a77368ec03cf6b24aeba25c820745/10.1007%40978-0-387-68489-5.pdf>
- Schneider, D. S., & Ayres, J. S. (2008). Two ways to survive infection: what resistance and tolerance can teach us about treating infectious diseases. *Nature Reviews Immunology*, 8(11), 889-895.
- WHO, 2017. *List of Bacteria for Which New Antibiotics are Urgently Needed*. World Health Organization

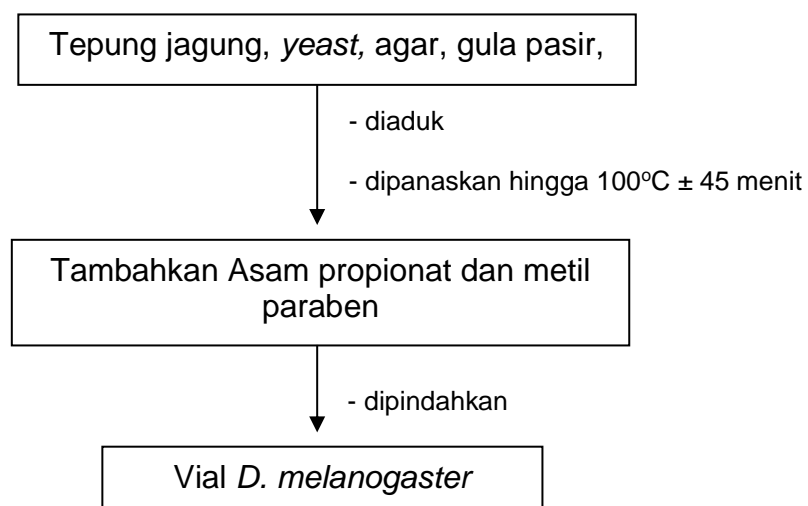
### Lampiran 1. Preparasi Sampel

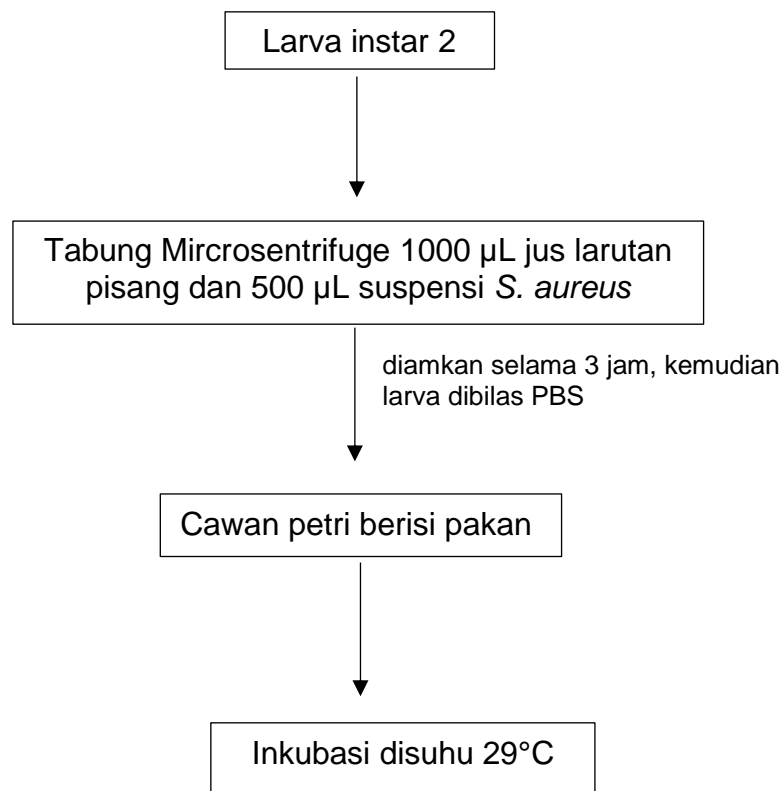
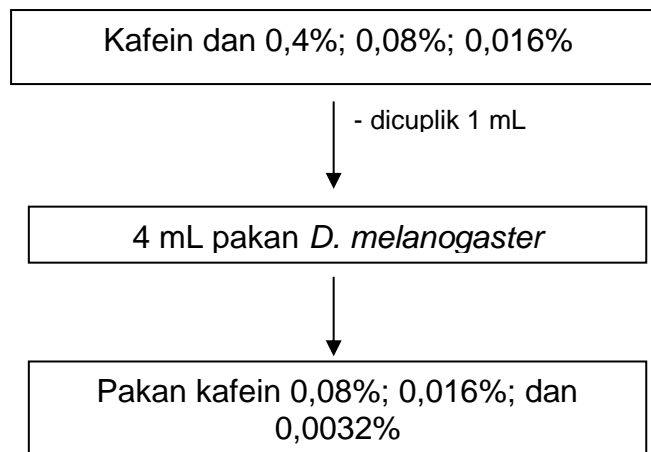


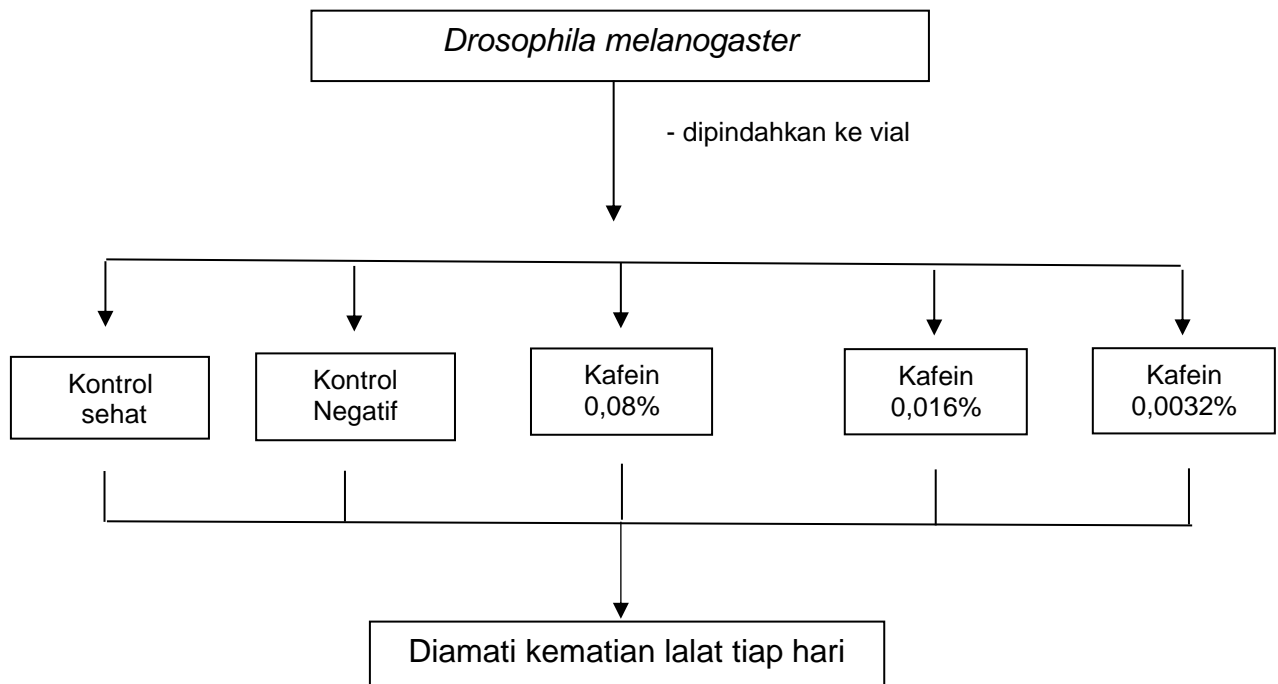
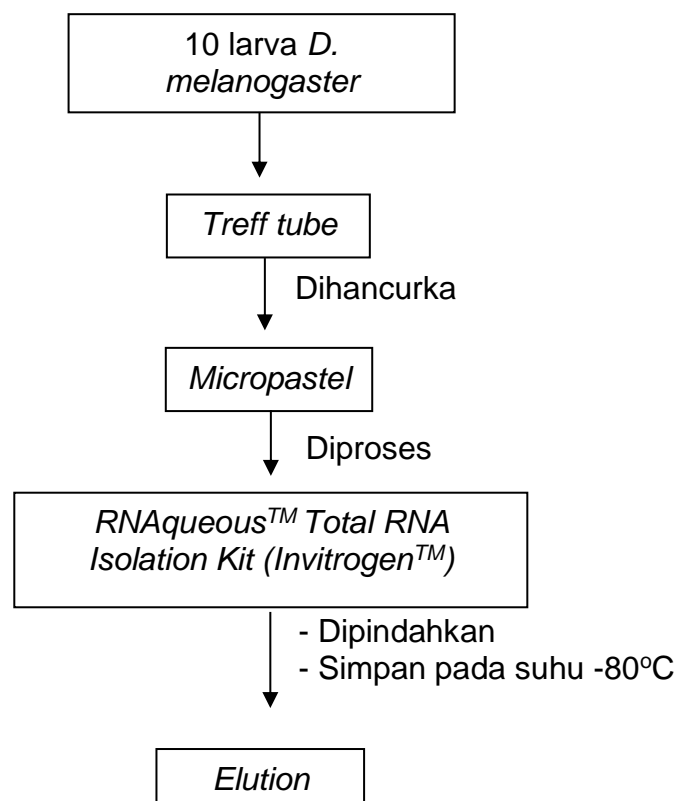
### Lampiran 2. Penyiapan Hewan Uji



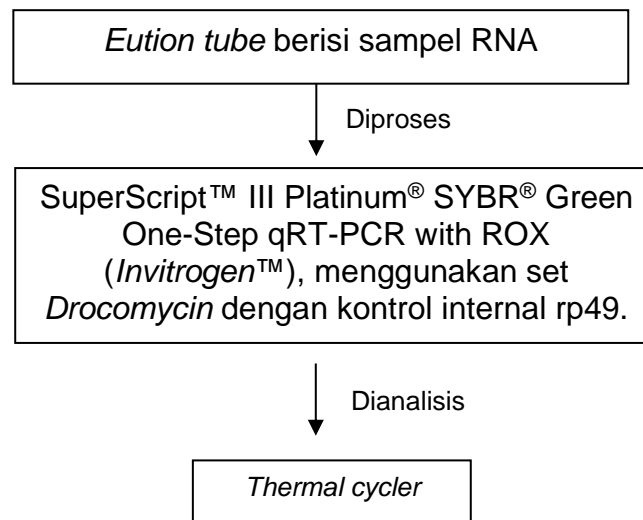
### Lampiran 3. Pembuatan Pakan



**Lampiran 4. Model Infeksi****Lampiran 5. Penyiapan Pakan Pengujian**

**Lampiran 6. Skema Kerja Uji Survival****Lampiran 8. Penyiapan Sampel RNA**

### Lampiran 9. Analisis Ekspresi Gen



### Lampiran 10. Perhitungan bahan dan konsentrasi

Berdasarkan hasil uji kelarutan kafein dalam air didapatkan hasil kelarutan yaitu 10 mg kafein dapat larut dalam 0,5 mL air (2 g dalam 100 mL air atau 1 g dalam 50 mL air dengan persentase kelarutan 2%).

- Pembuatan larutan kafein 2%

$$\frac{2 \text{ g}}{100 \text{ mL}} = \frac{X}{10 \text{ mL}}$$

$$X = \frac{2 \text{ g} \times 10 \text{ mL}}{100 \text{ mL}}$$

$$X = 0,2 \text{ gram}$$

Sehingga kafein yang di timbang adalah 0,2 gram lalu dilarutkan dalam 10 mL air

- Pengenceran dengan konsentrasi 0,08%

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 2\% = 20 \text{ mL} \times 0,08\%$$

$$V_1 = \frac{20 \text{ mL} \times 0,08\%}{2\%}$$

$$V_1 = 0,8 \text{ mL}$$

- Pengenceran dengan konsentrasi 0,0016%

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 2\% = 20 \text{ mL} \times 0,016\%$$

$$V_1 = \frac{20 \text{ mL} \times 0,0016\%}{2\%}$$

$$V_1 = 0,16 \text{ mL}$$

- Pengenceran dengan konsentrasi 0,0032%

$$V_1 \times N_1 = V_2 \times N_2$$

$$V_1 \times 2\% = 20 \text{ mL} \times 0,0032\%$$

$$V_1 = \frac{20 \text{ mL} \times 0,0032\%}{2\%}$$

$$V_1 = 0,032 \text{ mL}$$

### Lampiran 11. Gambar Penelitian



Gambar 11. Pembuatan Pakan *D. melanogaster*



Gambar 12. Pembuatan suspensi biakan





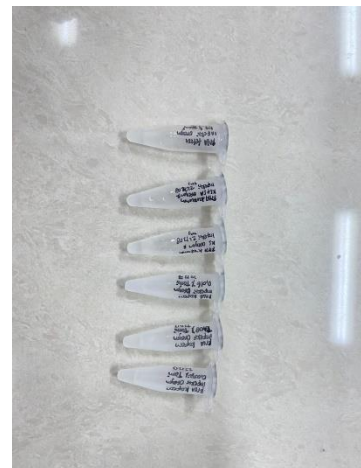
**Gambar 13. Pakan yang berisi lalat stok**



**Gambar 14. Larva yang menghitam**



**Gambar 15. Isolasi RNA**



**Gambar 16. Sampel yang telah diisolasi**



**Gambar 17. Proses PCR Sampel**

## Lampiran 12. Data Statistik

**Tabel 2. Hasil *one-way anova* ekspresi gen *Drs***

| <i>ANOVA summary</i>                      | <i>Value</i> |
|---|--------------|
| F   | 78.72        |
| P value                                   | 0.0005       |
| P value summary                           | ***          |
| Significant diff. among means (P < 0.05)? | Yes          |
| R squared                                 | 0,9833       |

**Tabel 3. Hasil uji lanjutan *Tukey* ekspresi gen *drs***

| <b>Tukey's Multiple Comparisons Test</b> | <b>Mean Diff</b> | <b>Summary</b> | <b>95% CI of diff</b> |
|--|------------------|----------------|-----------------------|
| Kontrol Negatif vs. Kafein 0,08%         | -0.1510          | ns             | -0.8483 to 0.5463     |
| Kontrol Negatif vs. Kafein 0,016%        | -2.254           | ***            | -2.951 to -1.556      |
| Kontrol Negatif vs. Kafein 0,0032%       | -0.1790          | ns             | -0.8763 to 0.5183     |
| Kafein 0.08 mM vs Kafein 0.016 mM        | -2.103           | ***            | -2.800 to -1.405      |
| Kafein 0.08 mM vs Kafein 0.0032 mM       | -0.028000        | ns             | -0.7253 to 0.6693     |
| Kafein 0.016 mM vs Kafein 0.0032 mM      | 2.075            | ***            | 1.377 to 2.772        |