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DAFTAR PUSTAKA

Abhimanyu Kedar, K., Chaudhari, S. R., & Rao, A. S. 2017, A Validated HPTLC Method for the Quantification of B-Sitosterol In Leaves, Bark of Putranjiva Roxburghii Wall, *National Conference on Research and Developments in Synthetic Organic Chemistry*, **13**.

Anacker, C., Zunszain, P. A., Carvalho, L. A., & Pariante, C. M. 2011, The glucocorticoid receptor: Pivot of depression and of antidepressant treatment?, *Psychoneuroendocrinology*, **36**: 3.

Araújo, L. B. D. C., Silva, S. L., Galvão, M. A. M., Ferreira, M. R. A., Araújo, E. L., Randau, K. P., & Soares, L. A. L. (2013). Total phytosterol content in drug materials and extracts from roots of Acanthospermum hispidum by UV-VIS spectrophotometry, *Rev Bras Farmacogn*, **23**: 736-742.

Asnis, G. M., & Henderson, M. A. 2015, Levomilnacipran for the treatment of major depressive disorder: a review, *Neuropsychiatric Disease and Treatment*, **11**: 125.

Astutik, E., Hidajah, A. C., Tama, T. D., Efendi, F., & Li, C. Y. 2021, Prevalence and determinants of depressive symptoms among adults in Indonesia: A cross-sectional population-based national survey. *Nursing Forum*, **56**: 37–44.

Athanasiadis, V., Chatzimitakos, T., Bozinou, E., Kotsou, K., Palaiogiannis, D., & Lalas, S. I. 2023, Optimization of Extraction Parameters for Enhanced Recovery of Bioactive Compounds from Quince Peels Using Response Surface Methodology, *Foods*, **12**: 2099.

Balakrishnan, N. 2021, *Handbook of the Logistic Distribution*, 1st edition, CRC Press, Boca Raton, London.

Balitbangkes RI. 2018, *Laporan Nasional Riskesdas 2018*, Jakarta, Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan.

Belovicova, K., Bogi, E., Csatlosova, K., & Dubovicky, M. 2017, Animal tests for anxiety-like and depression-like behavior in rats. *Interdisciplinary Toxicology*, **10**: 40.

Blasco-Serra, A., González-Soler, E. M., Cervera-Ferri, A., Teruel-Martí, V., & Valverde-Navarro, A. A. 2017, A standardization of the Novelty-Suppressed Feeding Test protocol in rats. *Neuroscience Letterr*, **658**: 73–78.

UNIVERSITAS
GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Bortolato, M., Chen, K., & Shih, J. C. 2008, Monoamine oxidase inactivation: from pathophysiology to therapeutics, *Advanced Drug Delivery Reviews*, **60**: 13–14

Castrén, E., & Rantamäki, T. 2010, The role of BDNF and its receptors in depression and antidepressant drug action: Reactivation of developmental plasticity, *Developmental Neurobiology*, **70**: 289–297.

Chhillar, R., & Dhingra, D. (2013). Antidepressant-like activity of gallic acid in mice subjected to unpredictable chronic mild stress, *Fundamental & Clinical Pharmacology*, **27**: 409–418.

Chu, A., & Wadhwa, R. 2023, *Selective Serotonin Reuptake Inhibitors*, StatPearls, Florida, Amerika Serikat.

Cimpoiu, C. 2011, HPTLC Hyphenated with FTIR: Principles, Instrumentation and Qualitative Analysis and Quantitation, In: Srivastava, M. (eds) *High-Performance Thin-Layer Chromatography (HPTLC)*, Springer, Berlin, Heidelberg.

Correia, A. S., Cardoso, A., & Vale, N. 2023, BDNF Unveiled: Exploring Its Role in Major Depression Disorder Serotonergic Imbalance and Associated Stress Conditions. *Pharmaceutic*s, **15**: 2081.

Courtney, N. A., & Ford, C. P. 2015, Mechanisms of 5-HT1A receptor-mediated transmission in dorsal raphe serotonin neurons. *The Journal of Physiology*, **594**: 953.

Cryan, J. F., Markou, A., & Lucki, I. 2002, Assessing antidepressant activity in rodents: Recent developments and future needs, *Trends in Pharmacological Sciences*, **23**: 238–245.

Cuong, D. M., Sathasivam, R., Park, C. H., Yeo, H. J., Park, Y. E., Kim, J. K., & Park, S. U. 2021, Analysis of triterpenoids, carotenoids, and phenylpropanoids in the flowers, leaves, roots, and stems of white bitter melon (Cucurbitaceae, *Momordica charantia*), *Tropical Journal of Pharmaceutical Research*, **20**:155–160.

Dalimartha, S. 1999, *Atlas tumbuhan obat Indonesia*. Trubus Agriwidya, Jakarta, Indonesia

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Dalmagro, A. P., Holzmann, I., Zimath, P. L., Cazarin, C. A., & de Souza, M. M. (2022). Antidepressant-like effect of caffeic acid: Involvement of the cellular signaling pathways, *Brazilian Journal of Pharmaceutical Sciences*, **58**: e20023.

Davis, R., & Wilde, M. I. 1996, Mirtazapine : A Review of its Pharmacology and Therapeutic Potential in the Management of Major Depression, *CNS Drugs*, **5**: 389–402.

De Munter, J., Pavlov, D., Gorlova, A., Sicker, M., Proshin, A., Kalueff, A. V., Svistunov, A., Kiselev, D., Nedorubov, A., Morozov, S., Umriukhin, A., Lesch, K. P., Strekalova, T., & Schroeter, C. A. 2021, Increased Oxidative Stress in the Prefrontal Cortex as a Shared Feature of Depressive- and PTSD-Like Syndromes: Effects of a Standardized Herbal Antioxidant. *Frontiers in Nutrition,* **8**: 122.

Deng, Z., Yuan, C., Yang, J., Peng, Y., Wang, W., Wang, Y., & Gao, W. 2018, Behavioral defects induced by chronic social defeat stress are protected by Momordica charantia polysaccharides via attenuation of JNK3/PI3K/AKT neuroinflammatory pathway, *Annals of Translational Medicine*, **7**: 1-11.

Desai, S., & Tatke, P. 2015, Charantin: An important lead compound from *Momordica charantia* for the treatment of diabetes, *Journal of Pharmacognosy and Phytochemistry*, **3**, 163–166.

Desai, S., Tatke, P., Mane, T., & Gabhe, S. 2021, Isolation, characterization and quantitative HPLC-DAD analysis of components of charantin from fruits of Momordica charantia. *Food Chemistry*, ***345***: 128717.

Dewi, M., Priatna, M., & Suhendy, H. 2021, View of Perbandingan Aktivitas Antidepresan Ekstrak etanolik Daun Pare (*Momordica charantia* L.) Berdasarkan Siklus Sirkadian. *journal.unper*, **596**: 497.

Dewi, T., Pratama, S., & Maulana, R. 2024. Drug Related Problems (Drps) Pada Pasien Depresi Di Instalasi Rawat Inap Rumah Sakit Jiwa Prof. Dr Soerojo Magelang Jawa Tengah, *Jurnal Farmasi Malahayati*, **7:** 54-65.

Di Giovanni, G., Esposito, E., & Di Matteo, V. 2010, Role of Serotonin in Central Dopamine Dysfunction, *CNS Neuroscience & Therapeutics*, **16**:179.

Ding, H., Cui, X. Y., Cui, S. Y., Ye, H., Hu, X., Zhao, H. L., Liu, Y. T., & Zhang, Y. H. 2018, Depression-like behaviors induced by chronic corticosterone exposure via drinking water: Time-course analysis, *Neuroscience Letters*, **687**: 202–206.

UNIVERSITAS
GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Dong, H., Gao, Z., Rong, H., Jin, M., & Zhang, X. 2014, β-asarone reverses chronic unpredictable mild stress-induced depression-like behavior and promotes hippocampal neurogenesis in rats. *Molecules*, **19**: 5634–5649.

APA. 2013, *Diagnostic and statistical manual of mental disorder (DSM-5-TR), 5 ed,* American Psychiatric Association, Virginia, Amerika Serikat.

Duman, R. S., & Monteggia, L. M. 2006, A Neurotrophic Model for Stress-Related Mood Disorders, *Biological Psychiatry*, **59**:1116–1127.

Dwi Aristyawan, A., Fiska Yuliarni, F., Suryandari, M., Ari Anggraini, N., Farmasi Surabaya, A., & Timur, J. 2024, Skrining Fitokimia Ekstrak etanolik Jamur Kuping Hitam (Auricularia nigricans) Dengan Metode Soxletas, *Jurnal Farmasi Sains dan Obat Tradisional*, **118**.

Edinoff, A. N., Akuly, H. A., Hanna, T. A., Ochoa, C. O., Patti, S. J., Ghaffar, Y. A., Kaye, A. D., Viswanath, O., Urits, I., Boyer, A. G., Cornett, E. M., & Kaye, A. M. 2021, Selective Serotonin Reuptake Inhibitors and Adverse Effects: A Narrative Review, *Neurology International*, **13**: 387-401

Ekong, M. B., & Iniodu, C. F. 2021, Nutritional therapy can reduce the burden of depression management in low income countries: A review, *IBRO Neuroscience Reports*, **11**:15–28.

Ekor, M. 2014, The growing use of herbal medicines: Issues relating to adverse reactions and challenges in monitoring safety, *Frontiers in Neurology*, **177**.

Elhai, J. D., Contractor, A. A., Tamburrino, M., Fine, T. H., Prescott, M. R., Shirley, E., Chan, P. K., Slembarski, R., Liberzon, I., Galea, S., & Calabrese, J. R. 2012, The factor structure of major depression symptoms: a test of four competing models using the Patient Health Questionnaire-9, *Psychiatry Research*, **199**:169–173.

Elsevier. 2024, Mental and Behavioral Health: Serotonin Norepinephrine Reuptake Inhibitors (SNRIs). *Elsevier,* viewed 18 August 2025, <https://elsevier.health/en-US/preview/serotonin-norepinephrine-reuptake-inhibitors-snris>

Ferguson, J. M. 2001, SSRI Antidepressant Medications: Adverse Effects and Tolerability. *Primary Care Companion to The Journal of Clinical Psychiatry*, **3**: 22.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

FHI. 2017, Farmakope Herbal Indonesia Edisi II, *Kementerian Kesehatan Republik Indonesia.*

FHI. 2022, Suplemen I Farmakope Herbal Indonesia Edisi II. *Kementerian Kesehatan Republik Indonesia.*

Fiedorowicz, J. G., & Swartz, K. L. 2004, The Role of Monoamine Oxidase Inhibitors in Current Psychiatric Practice, *Journal of Psychiatric Practice*, **10**: 239.

Fitriadi, H. 2025. Evaluasi Kepatuhan Penggunaan Obat Antidepresan pada Pasien Depresi di RSJ Dr. Radjiman Wediodiningrat Lawang, Kabupaten Malang, *Tesis,* MSc, Universitas Islam Negri Maulana Malik Ibrahim.

Foudah, A. I., Alqarni, M. H., Alam, A., Devi, S., Salkini, M. A., & Alam, P. (2022). Rutin Improves Anxiety and Reserpine-Induced Depression in Rats. *Molecules*, **27**: 7313.

Fritz, M., Fakhoury, M., Markov, D. D., & Novosadova, E. V. 2022, Chronic Unpredictable Mild Stress Model of Depression: Possible Sources of Poor Reproducibility and Latent Variables. *Biology 2022,* **11**: 1621.

Ganesan, A., Natesan, S., Perumal, P. G., Vellayutham, R., Manickam, K., & Ramasamy, N. 2007, Anxiolytic, antidepressant and anti-Inflammatory activities of methanol extract of *Momordica charantia* Linn. Leaves (Cucurbitaceae), *Iranian Journal Of Pharmacology & Therapeutics*, **7**: 43-47

Gandjar, G., & Rohman, A. 2012, *Analisis Obat Secara Spektrofotometri dan Kromatografi*, Kanisius, Yogyakarta, Indonesia**.**

Gao, L., Wu, C., Liao, Y., Zhang, S., & Zhao, J. 2021, Herba Rhodiolae alleviates depression via the BDNF/TrkB-GSK-3β signaling pathway, *Annals of Translational Medicine*, **9**:1758–1758.

Garg, V., Dhar, V. J., Sharma, A., & Dutt, R. 2012, Facts about standardization of herbal medicine: a review. *Zhong Xi Yi Jie He Xue Bao, Journal of Chinese Integrative Medicine*, **10**:1077–1083.

Gillman, P. K. 2007, Tricyclic antidepressant pharmacology and therapeutic drug interactions updated, *British Journal of Pharmacology*, **151**:737.

Grace, A. A. 2016, Dysregulation of the dopamine system in the pathophysiology of schizophrenia and depression, *Nature Reviews. Neuroscience*, **17**:524.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Grover, J. K., & Yadav, S. P. 2004, Pharmacological actions and potential uses of Momordica charantia: a review, *Journal of Ethnopharmacology*, **93**:123–132.

Harmer, C. J., Duman, R. S., & Cowen, P. J. 2017, How do antidepressants work? New perspectives for refining future treatment approaches, *The Lancet. Psychiatry*, **4**:409–418.

Haseeb M, A., Ahmad, F., & Kumar, A. 2018, Antidepressant activity of aqueous extract of Momordica charantia leaves, *International Journal of Basic & Clinical Pharmacology*, **7**:767–773.

Horst, W. D., & Preskorn, S. H. 1998, Mechanisms of action and clinical characteristics of three atypical antidepressants: venlafaxine, nefazodone, bupropion, *Journal of Affective Disorders*, **51**:237–254.

Hossen, M. A., Ali Reza, A. S. M., Amin, M. B., Nasrin, M. S., Khan, T. A., Rajib, M. H. R., Tareq, A. M., Haque, M. A., Rahman, M. A., & Haque, M. A. 2021, Bioactive metabolites of Blumea lacera attenuate anxiety and depression in rodents and computer-aided model, *Food Science & Nutrition*, **9**: 3836–3851.

Hu, Y., Gan, Y., Lei, J., Cai, J., Zhou, Y., Chen, H., Zhang, Q., & Shi, Y. 2025, Schaftoside Reduces Depression- and Anxiogenic-like Behaviors in Mice Depression Models, *Brain Sciences,* **15***:* 238.

Huecker, M. R., Smiley, A., & Saadabadi, A. 2024, Bupropion. *XPharm: The Comprehensive Pharmacology Reference*, **1:** 4.

European Medicines Agency. 1995, *ICH Topic Q 2 (R1): Validation of Analytical Procedures: Text and Methodology Step 5*, London, European Medicines Agency

Ishola, I. O., Akinyede, A. A., & Sholarin, A. M. 2014, Antidepressant and anxiolytic properties of the methanolic extract of *Momordica charantia* Linn. (Cucurbitaceae) and its mechanism of action. *Drug Research*, **64**: 368–376.

Kandangath, K. R., Kumar, G. P., & Ilaiyaraja, N. 2015, Nutritional, Pharmacological and Medicinal Properties of *Momordica Charantia*. *International Journal of Nutrition and Food Sciences*, **4**: 75–83.

Kaur, I., Suthar, N., Kaur, J., Bansal, Y., & Bansal, G. 2016, Accelerated Stability Studies on Dried Extracts of *Centella asiatica* Through Chemical, HPLC,

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

HPTLC, and Biological Activity Analyses, *Journal of Evidence-Based Complementary and Alternative Medicine*, **21**: 127–137.

Kementerian Kesehatan. 1994, *Peraturan Menteri Kesehatan Republik Indonesia, Nomor:661/MENKES/SK/VII/1994, tentang Persyaratan Obat Tradisional,* Jakarta, Kementerian Kesehatan Republik Indonesia.

Kementerian Kesehatan. 2024. *Laporan Tematik Survei Kesehatan Indonesia Tahun 2023*, Jakarta, Kementerian Kesehatan Republik Indonesia.

Kessing, L. V. 2007, Epidemiology of subtypes of depression, *Acta Psychiatrica Scandinavica*, **115**: 85–89.

Khan, N., Ahmad, I., & Sadiq, M. B. 2022, Optimization of Ultrasonic Assisted Extraction of Bioactive Compounds from Almond Hull, *Sarhad Journal of Agriculture*, **38**: 676–684.

Krishnan, V., & Nestler, E. J. 2011, Animal Models of Depression: Molecular Perspectives, *Current Topics in Behavioral Neurosciences*, **7**: 121.

Kristiyani, A., Ikawati, Z., Gani, A. P., & Sofro, Z. M. 2024, Animal models for antidepressant activity assay on natural and conventional agents: A review of preclinical testing, *Journal of Herbmed Pharmacology*, **13**: 523–536.

Laban, T. S., & Saadabadi, A. (2023). *Monoamine Oxidase Inhibitors (MAOI),* StatPearls Publishing LLC, Bethesda, USA.

Levy, M. J. F., Boulle, F., Emerit, M. B., Poilbout, C., Steinbusch, H. W. M., Van den Hove, D. L. A., Kenis, G., & Lanfumey, L. 2019, 5-HTT independent effects of fluoxetine on neuroplasticity. *Scientific Reports* **9**: 1–11.

Li, H. Y., Wang, J., Liang, L. F., Shen, S. Y., Li, W., Chen, X. R., Li, B., Zhang, Y. Q., & Yu, J. 2022, Sirtuin 3 Plays a Critical Role in the Antidepressant- and Anxiolytic-like Effects of Kaempferol. *Antioxidants*, **11:**1886.

Li, Y. X., Cheng, K. C., Hsu, C. T., Cheng, J. T., & Yang, T. T. 2022, Major Plant in Herbal Mixture Gan-Mai-Da-Zao for the Alleviation of Depression in Rat Models, *Plants 2022,* **11**: 258.

Lim, G. Y., Tam, W. W., Lu, Y., Ho, C. S., Zhang, M. W., & Ho, R. C. 2018, Prevalence of Depression in the Community from 30 Countries between 1994 and 2014, *Scientific*, **8: 1–10**.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Lin, L., Herselman, M. F., Zhou, X. F., & Bobrovskaya, L. 2022, Effects of corticosterone on BDNF expression and mood behaviours in mice, *Physiology & Behavior*, **247**: 113721.

Lindholm, J. S. O., & Castrén, E. 2014, Mice with altered BDNF signaling as models for mood disorders and antidepressant effects, *Frontiers in Behavioral Neuroscience*, **8**: 88043.

Liu, Y., Lv, B., Tang, K., Qu, H., Yu, F., & Shi, Y. 2023, Si-Ni-San reverses dietary fat absorption defects in a murine model of depression, *Biomedicine & Pharmacotherapy*, **168**: 115677.

Liu, Y., Zhao, J., & Guo, W. 2018, Emotional roles of mono-aminergic neurotransmiters in major depressive disorder and anxiety disorders, *Frontiers in Psychology,* **9**: 412042.

Machado, M., Iskedjian, M., Ruiz, I., & Einarson, T. R. 2006, Remission, dropouts, and adverse drug reaction rates in major depressive disorder: a meta-analysis of head-to-head trials, *Current Medical Research and Opinion*, **22**:1825–1837.

Mada, S. B., Garba, A., Mohammed, H. A., Muhammad, A., & Olagunju, A. 2013, Antimicrobial activity and phytochemical screening of aqueous and ethanol extracts of *Momordica charantia* L. leaves, *Journal of Medicinal Plants Research* **7**: 579–586.

Maier, A., Riedel-Heller, S. G., Pabst, A., & Luppa, M. 2021, Risk factors and protective factors of depression in older people . A systematic review, *Plos One*, **16**: e0251326.

Maletic, V., Robinson, M., Oakes, T., Iyengar, S., Ball, S. G., & Russell, J. 2007, Neurobiology of depression: an integrated view of key findings, *International Journal of Clinical Practice*, **61**: 2030–2040.

Markov, D. D., & Novosadova, E. V. 2022, Chronic Unpredictable Mild Stress Model of Depression: Possible Sources of Poor Reproducibility and Latent Variables. *Biology*, **11**: 1621.

Martínez-Damas, M. G., Genis-Mendoza, A. D., Cruz, V. P. de la, Canela-Tellez, G. D., Jiménez-Estrada, I., Sanchez, J. H. N., Ramos-Chávez, L. A., García, S., Ramírez-Ramírez, M., & Coral-Vázquez, R. M. (2021). Epicatechin treatment generates resilience to chronic mild stress-induced depression in a murine model, *Physiology & Behavior*, **238**

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Martins, J., & Brijesh, S. 2018, Phytochemistry and pharmacology of anti-depressant medicinal plants: A review, *Biomed Pharmacother*, **104**: 343–365.

McKlveen, J. M., Myers, B., & Herman, J. P. 2015, The medial prefrontal cortex: coordinator of autonomic, neuroendocrine and behavioural responses to stress, *Journal of Neuroendocrinology*, **27**: 446–456.

Millan, M. J. 2004, The role of monoamines in the actions of established and "novel" antidepressant agents: a critical review, *European Journal of Pharmacology*, **500**: 371–384.

MIMS Indonesia. 2024, Fluoxetine: Uses, Dosage, Side Effects and More, *MIMS Indonesia*, diakses pada 3 Desember 2024, https://www.mims.com/indonesia/drug/info/fluoxetine?mtype=generic.

Missale, C., Russel Nash, S., Robinson, S. W., Jaber, M., & Caron, M. G. 1998, Dopamine receptors: from structure to function, *Physiological Reviews*, **78**: 189–225.

Miyanishi, H., & Nitta, A. 2021, A Role of BDNF in the Depression Pathogenesis and a Potential Target as Antidepressant: The Modulator of Stress Sensitivity "Shati/Nat8l-BDNF System" in the Dorsal Striatum, *Pharmaceuticals*, **14**: 889.

Molendijk, M. L., Spinhoven, P., Polak, M., Bus, B. A. A., Penninx, B. W. J. H., & Elzinga, B. M. 2014, Serum BDNF concentrations as peripheral manifestations of depression: evidence from a systematic review and meta-analyses on 179 associations (N=9484), *Molecular Psychiatry*, **19**: 791–800.

Moncrieff, J., Cooper, R. E., Stockmann, T., Amendola, S., Hengartner, M. P., & Horowitz, M. A. 2022, The serotonin theory of depression: a systematic umbrella review of the evidence, *Molecular Psychiatry,* **28**: 3243–3256.

Mondal, A. C., & Fatima, M. 2019, Direct and indirect evidences of BDNF and NGF as key modulators in depression: role of antidepressants treatment, *International Journal of Neuroscience*, **129**: 283–296.

Moret, C., & Briley, M. 2011, The importance of norepinephrine in depression, *Neuropsychiatric Disease and Treatment*, **7**: **9**–13.

Nabila Virdausy, V., Sabrina, E. A., Jannah, A., & Virdausy, V. N. 2025, A Literature Review: Active Compound Content and Pharmacological Activity of Bitter Melon Plant (*Momordica charantia* L.) for Health, *Jurnal Biologi Tropis*, **25**: 220–234.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Nestler, E. J., & Carlezon, W. A. 2006, The Mesolimbic Dopamine Reward Circuit in Depression, *Biological Psychiatry*, **59**: 1151–1159.

Ogata, N., de Souza Dantas, L. M., & Crowell-Davis, S. L. 2023, Selective Serotonin Reuptake Inhibitors, *Veterinary Psychopharmacology*, **103**: 128.

Oh, D. R., Choi, C., Kim, M. J., Mun, B. Y., Ko, H., Oh, K. N., Jo, A., Kim, J. Y., & Bae, D. 2023, Antidepressant effects of p-coumaric acid isolated from Vaccinium bracteatum leaves extract on chronic restraint stress mouse model and antagonism of serotonin 6 receptor in vitro, *Journal of Phytotherapy and Phytopharmacology*, **116**

Olausson, P., Kiraly, D. D., Gourley, S. L., & Taylor, J. R. 2012, Persistent effects of prior chronic exposure to corticosterone on reward-related learning and motivation in rodents, *Psychopharmacology*, **225**: 569.

Panayotis, N., Freund, P. A., Marvaldi, L., Shalit, T., Brandis, A., Mehlman, T., Tsoory, M. M., & Fainzilber, M. 2021, β-sitosterol reduces anxiety and synergizes with established anxiolytic drugs in mice, *Cell Reports Medicine*, **2**: 100281.

Pangestu, S. T., Anggadiredja, K., & Garmana, A. N. 2021, *Aktivitas Antidepresan Konsentrat Jus Buah Pare (Momordica Charantia L.) Pada Mencit DDY*. *Tesis,* M.Sc. Sains dan Teknologi Farmasi, Institut Teknologi Bandung, Bandung

Pariante, C. M., & Lightman, S. L. 2008, The HPA axis in major depression: classical theories and new developments, *Trends in Neurosciences*, **31**: 464–468.

Perry, K. W., & Fuller, R. W. 1997, Fluoxetine increases norepinephrine release in rat hypothalamus as measured by tissue levels of MHPG-SO4 and microdialysis in conscious rats, *Journal of Neural Transmission,* **104: 953–966**.

Pierscionek, T., Adekunte, O., Watson, S., Ferrier, I. N., & Alabi, A. 2014, Role of corticosteroids in the antidepressant response, *ChronoPhysiology and Therapy*, **4**: 87–98.

Porter, C., Favara, M., Hittmeyer, A., Scott, D., Sánchez Jiménez, A., Ellanki, R., Woldehanna, T., Duc, L. T., Craske, M. G., & Stein, A. 2021, Impact of the COVID-19 pandemic on anxiety and depression symptoms of young people in the global south: evidence from a four-country cohort study, *BMJ Open*, **11**.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Qu, S. Y., Li, X. Y., Heng, X., Qi, Y. Y., Ge, P. Y., Ni, S. J., Yao, Z. Y., Guo, R., Yang, N. Y., Cao, Y., Zhang, Q. C., & Zhu, H. X. 2021, Analysis of Antidepressant Activity of Huang-Lian Jie-Du Decoction Through Network Pharmacology and Metabolomics, *Frontiers in Pharmacology*, **12**: 1–18.

Ramaholimihaso, T., Bouazzaoui, F., & Kaladjian, A. 2020, Curcumin in Depression: Potential Mechanisms of Action and Current Evidence - A Narrative Review, *Frontiers in Psychiatry*, **11**: 572533.

Raubenheimer, P. J., Young, E. A., Andrew, R., & Seckl, J. R. 2006, The role of corticosterone in human hypothalamic–pituitary–adrenal axis feedback, *Clinical Endocrinology,* **65**: 22-26.

Raza, A., Akhtar, M. N., Maqbool, T., Khalil, A. A., & Mohamed, M. H. 2024, Optimization of ultrasonically extracted β-sitosterol from Berberis jaeschkeana using response surface methodology, *Food Science & Nutrition*, **12**: 8211–8219.

Ren, L., Zhang, H., Tao, W., Chen, Y., Zou, Z., Guo, X. Y., Shen, Q., Feng, Q., & Hu, J. (2022). The Rapid and Long-Lasting Antidepressant Effects of Iridoid Fraction in Gardenia Jasminoides J.Ellis Are Dependent on Activating PKA-CREB Signaling Pathway, *Frontiers in Pharmacology*, **13**: 1590.

Rondón Bernard, J. E. 2018, Depression: A Review of its Definition. *MOJ Addiction Medicine & Therapy*, **1**: 6-7

Rush, A. J. 2004, *4.7 Mood Disorders: Treatment Of Depression*, Lippincott Williams & Wilkins, Pennsylvania, USA.

Sairanen, M., Lucas, G., Ernfors, P., Castrén, M., & Castrén, E. 2005, Brain-Derived Neurotrophic Factor and Antidepressant Drugs Have Different But Coordinated Effects on Neuronal Turnover, Proliferation, and Survival in the Adult Dentate Gyrus, *The Journal of Neuroscience*, **25**: 1089.

Salunkhe, R., Gadgoli, C., Naik, A., & Patil, N. 2021, Pharmacokinetic Profile and Oral Bioavailability of Diosgenin, Charantin, and Hydroxychalcone From a Polyherbal Formulation, *Frontiers in Pharmacology*, **12**: 1–14.

Sangkuhl, K., Klein, T. E., & Altman, R. B. 2009, Selective Serotonin Reuptake Inhibitors (SSRI) Pathway, *Pharmacogenetics and Genomics*, **19**: 907.

Santarelli, L., Saxe, M., Gross, C., Surget, A., Battaglia, F., Dulawa, S., Weisstaub, N., Lee, J., Duman, R., Arancio, O., Belzung, C., & Hen, R. 2003, Requirement of

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

hippocampal neurogenesis for the behavioral effects of antidepressants, *Science,* **301**: 805–809.

Sapolsky, R. M., Romero, L. M., & Munck, A. U. 2000, How Do Glucocorticoids Influence Stress Responses? Integrating Permissive, Suppressive, Stimulatory, and Preparative Actions, *Endocrine Reviews*, **21**: 55–89.

Sarris, J., Panossian, A., Schweitzer, I., Stough, C., & Scholey, A. 2011, Herbal medicine for depression, anxiety and insomnia: A review of psychopharmacology and clinical evidence, *European Neuropsychopharmacology*, **21**: 841–860.

Sasaki, K., Linh, T. N., Hirano, A., Tominaga, K., Nukaga, S., Nozaki, H., Arimura, T., & Isoda, H. 2022, Microalgae extract induces antidepressant-like activity via neuroinflammation regulation and enhances the neurotransmiter system, *Food and Chemical Toxicology*, **170**: 113508.

Sathish Kumar, D., Vamshi Sharathnath, K., Yogeswaran, P., Harani, A., Sudhakar, K., Sudha, P., & Banji, D. 2010, A medicinal potency of *Momordica charantia*, *International Journal of Pharmaceutical Sciences Review and Research*, **1**: 95–100.

Sen, A., Dhavan, P., Shukla, K. K., Singh, S., & Tejovathi, G. 2012, Analysis of IR, NMR and Antimicrobial Activity of β-Sitosterol Isolated from Momordica charantia, *Sci Secure J Biotech*, **1**: 9–13.

Shao, Q., Li, Y., Jin, L., Zhou, S., Fu, X., Liu, T., Luo, G., Du, S., & Chen, C. 2024, Semen Cuscutae flavonoids activated the cAMP-PKA-CREB-BDNF pathway and exerted an antidepressant effect in mice, *Frontiers in Pharmacology*, **15**:1491900.

Sheffler, Z. M., & Abdijadid, S. 2023, *Antidepressants,* StatPearls Publishing LLC, Bethesda, USA

Shen, L., Pang, S., Zhong, M., Sun, Y., Qayum, A., Liu, Y., Rashid, A., Xu, B., Liang, Q., Ma, H., & Ren, X. 2023, A comprehensive review of ultrasonic assisted extraction (UAE) for bioactive components: Principles, advantages, equipment, and combined technologies. *Ultrasonics Sonochemistry*, **101**

Simanjuntak, T. D., Noveyani, A. E., & Kinanthi, C. A. 2022, Prevalensi dan Faktor-faktor yang Berhubungan dengan Simtom Depresi pada Penduduk di Indonesia (Analisis Data IFLS5 Tahun 2014-2015, *Jurnal Epidemiologi Kesehatan Indonesia*, **6**: 97–104.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Singh, J. B., Fedgchin, M., Daly, E., Xi, L., Melman, C., De Bruecker, G., Tadic, A., Sienaert, P., Wiegand, F., Manji, H., Drevets, W. C., & Van Nueten, L. 2016, Intravenous Esketamine in Adult Treatment-Resistant Depression: A Double-Blind, Double-Randomization, Placebo-Controlled Study, *Biological Psychiatry*, **80**: 424–431.

Spinks, D., & Spinks, G. 2004, Serotonin reuptake inhibition: an update on current research strategies, *Frontiers Current Medicinal Chemistry*, **1**: 347-359.

Stahl, S. M., Pradko, J., Haight, B. R., Modell, J. G., Rockett, C. B., & Learned-Coughlin, S. 2004, A Review of the Neuropharmacology of Bupropion, a Dual Norepinephrine and Dopamine Reuptake Inhibitor, *Primary Care Companion to the Journal of Clinical Psychiatry*, **6**: 159-166.

Stochmal, A., Oleszek, W., & Kapusta, I. 2008, TLC of Triterpenes (Including Saponins), *TSuresh*, **20**: 519-542

Sturm, M., Becker, A., Schroeder, A., Bilkei-Gorzo, A., & Zimmer, A. 2015, Effect of chronic corticosterone application on depression-like behavior in C57BL/6N and C57BL/6J mice, *Genes, Brain, and Behavior*, **14** : 292–300.

Sudarsono, D., Gunawan, S., Wahyono, I. A., Donatus, & Purnomo. 2002, *Tumbuhan obat,* Pusat Studi Obat Tradisional Universitas Gadjah Mada, Yogyakarta, Indonesia.

Sutradhar, J., & R. Sarkar, B. 2023, Quantification of β-Sitosterol by Validated High Performance Thin Layer Chromatography (HPTLC) Densitometric Method in the Flowering Buds of *Mesua ferrea* Linn, *Journal of Scientific Research*, **15**: 879–886.

Tabata, R. C., Wilson, J. M. B., Ly, P., Zwiegers, P., Kwok, D., Van Kampen, J. M., Cashman, N., & Shaw, C. A. 2008, Chronic exposure to dietary sterol glucosides is neurotoxic to motor neurons and induces an ALS-PDC phenotype, *NeuroMolecular Medicine*, **10**: 24–39.

Tamilanban, T., Chitra, K., & Chitra, V. 2018, In vitro neuroprotective effect of charantin from Momordica charantia against neurotoxin and endoplasmic reticulum stress-induced cell death in SH-SY5Y cells, *International Journal of Green Pharmacy*, **12**: S555–S560.

Tkachenko, Y., & Niedzielski, P. 2022, FTIR as a Method for Qualitative Assessment of Solid Samples in Geochemical Research: A Review, *Molecules*, **27**: 8846.

UNIVERSITAS GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Tolentino, J. C., & Schmidt, S. L. 2018, DSM-5 Criteria and Depression Severity: Implications for Clinical Practice, *Frontiers in Psychiatry*, **9**: 450.

Ueno, H., Takahashi, Y., Murakami, S., Wani, K., Matsumoto, Y., Okamoto, M., & Ishihara, T. 2022, Effect of simultaneous testing of two mice in the tail suspension test and forced swim test, *Scientific Reports*, **12**: 1–14.

Upadhyay, A., Agrahari, P., & Singh, D. K. 2015, A review on salient pharmacological features of momordica charantia, *International Journal of Pharmacology*, **11**: 405–413.

Voleti, B., & Duman, R. S. 2012, The roles of neurotrophic factor and Wnt signaling in depression, *Clinical Pharmacology and Therapeutics*, **91**: 333–338.

Wang, H., Liu, J., He, J., Huang, D., Xi, Y., Xiao, T., Ouyang, Q., Zhang, S., Wan, S., & Chen, X. 2022, Potential mechanisms underlying the therapeutic roles of sinisan formula in depression: Based on network pharmacology and molecular docking study, *Frontiers in Psychiatry*, **13**: 1063489.

Wang, Q., Timberlake, M. A., Prall, K., & Dwivedi, Y. 2017, The Recent Progress in Animal Models of Depression, *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, **77**: 99.

Wang, Y., Zhou, S., Song, X., Ding, S., Wang, B., Wen, J., & Chen, C. 2022, Study on Antidepressant Effect and Mechanism of Crocin Mediated by the mTOR Signaling Pathway, *Neurochemical Research*, **47**: 3126–3136.

Wang, H., Chen, Y., Wang, L., Liu, Q., Yang, S., & Wang, C. 2023, Advancing herbal medicine: enhancing product quality and safety through robust quality control practices, *Frontiers in Pharmacology*, **14**: 1265178.

World Health Organization. 2017, *Depression and Other Common Mental Disorders*. Switzerland, WHO.

World Health Organization. 2023, *World Suicide Prevention Day 2023,* Cairo, WHO.

Willner, P. 2005, Chronic mild stress (CMS) revisited: consistency and behavioural-neurobiological concordance in the effects of CMS, *Neuropsychobiology*, **52**: 90–110.

Wu, J., Chen, H., Li, H., Tang, Y., Yang, L., Cao, S., & Qin, D. 2016, Antidepressant Potential of Chlorogenic Acid-Enriched Extract from Eucommia ulmoides

UNIVERSITAS
GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
Ani Kristiyani, Prof. Dr. apt. Zullies Ikawati; Dr. apt. Andayana Puspitasari Gani, M.Si; Dr. dr. Zaenal Muttaqien Sofro,
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Oliver Bark with Neuron Protection and Promotion of Serotonin Release through Enhancing Synapsin I Expression, *Molecules*, **21**:1-17.

Wu, L. M., Hu, M. H., Tong, X. H., Han, H., Shen, N., Jin, R. T., Wang, W., Zhou, G. X., He, G. P., & Liu, Y. S. 2012, Chronic Unpredictable Stress Decreases Expression of Brain-Derived Neurotrophic Factor (BDNF) in Mouse Ovaries: Relationship to Oocytes Developmental Potential. *PLoS ONE*, **7**: 3–10.

Xie, X., Shen, Q., Ma, L., Chen, Y., Zhao, B., & Fu, Z. 2018, Chronic corticosterone-induced depression mediates premature aging in rats. *Journal of Affective Disorders*, **229**: 254–261.

Yadid, G., & Friedman, A. 2008, Dynamics of the dopaminergic system as a key component to the understanding of depression, *Progress in Brain Research*, **172**: 265–286.

Ye, J. Y., Li, L., Hao, Q. M., Qin, Y., & Ma, C. S. 2019, β-Sitosterol treatment attenuates cognitive deficits and prevents amyloid plaque deposition in amyloid protein precursor/presenilin 1 mice. *The Korean Journal of Physiology & Pharmacology*, **24**: 39.

Yeung, K. S., Hernandez, M., Mao, J. J., Haviland, I., & Gubili, J. 2018, Herbal medicine for depression and anxiety: A systematic review with assessment of potential psycho-oncologic relevance. *Phytotherapy Research*, **32**: 865–891

Yin, Y., Liu, X., Liu, J., Cai, E., Zhao, Y., Li, H., Zhang, L., Li, P., & Gao, Y. 2018, The effect of beta-sitosterol and its derivatives on depression by the modification of 5-HT, DA and GABA-ergic systems in mice, *RSC Advances*, **8**: 671–680

Yoon, B. H., Truong, V. L., & Jeong, W. S. (2025). Phytosterols: Extraction Methods, Analytical Techniques, and Biological Activity, *Molecules*, **30**: 2488

Yoshime, L. T., de MELO, I. L. P., Sattler, J. A. G., Torres, R. P., & Mancini-Filho, J. 2019, Bioactive compounds and the antioxidant capacities of seed oils from pomegranate (Punica granatum l.) and bitter gourd (*Momordica charantia* L.). *Food Science and Technology*, **39**: 571–580.

Yoshime, L. T., Pereira De Melo, I. L., Augusto, J., Sattler, G., Bonifácio, E., De Carvalho, T., & Mancini-Filho, J. 2016, Bitter gourd (*Momordica charantia* L.) seed oil as a naturally rich source of bioactive compounds for nutraceutical purposes, *Nutrire,* **41**: 1-7.

UNIVERSITAS
GADJAH MADA
AKTIVITAS ANTIDEPRESAN EKSTRAK ETANOLIK DAUN PARE (MOMORDICA CHARANTIA LINN.) MELALUI PERUBAHAN PERILAKU DAN KADAR NEUROTRANSMITER OTAK PADA MODEL MENCIT DEPRESI
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Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Youdim, K. A., Shukitt-Hale, B., & Joseph, J. A. 2004, Flavonoids and the brain: interactions at the blood-brain barrier and their physiological effects on the central nervous system, *Free Radical Biology & Medicine*, **37** : 1683–1693.

Zeni, A. L. B., Camargo, A., & Dalmagro, A. P. (2019). Lutein prevents corticosterone-induced depressive-like behavior in mice with the involvement of antioxidant and neuroprotective activities, *Pharmacology, Biochemistry, and Behavior*, **179**: 63–72.

Zhang, H., Xue, X., Pan, J., Song, X., Chang, X., Mao, Q., Lu, Y., Zhao, H., Wang, Y., Chi, X., Wang, S., & Ma, K. 2021, Integrated analysis of the chemical-material basis and molecular mechanisms for the classic herbal formula of Lily Bulb and Rehmannia Decoction in alleviating depression, *Chinese Medicine*, **16**: 1–28.

Zhao, D., Zheng, L., Qi, L., Wang, S., Guan, L., Xia, Y., & Cai, J. 2016, Structural Features and Potent Antidepressant Effects of Total Sterols and β-sitosterol Extracted from Sargassum horneri, *Marine Drugs 2016, Vol. 14, Page 123*, **14**: 123.

Zou, C., Ding, X., Flaherty, J. H., & Dong, B. 2013, Clinical efficacy and safety of fluoxetine in generalized anxiety disorder in Chinese patients, *Neuropsychiatric Disease and Treatment*, **9**: 1661.