

## DAFTAR PUSTAKA

- Abdulqader YAY, Kawy HSA, Alkreathy HM, Rajeh NA. 2021. The potential antiepileptic activity of astaxanthin in epileptic rats treated with valproic acid. *Saudi Pharm. J* 29: 418–26.
- Affandi H Sujuti H, Permatasari HK, Muid M. 2018. Hubungan IL-8 dan IL-4 pada Anak dengan Status Epileptikus. *Majalah Kesehatan* 5(4) 198–06.
- Aguilar-Castillo, M. J., Cabezudo-García, P., Ciano-Petersen, N. L., García-Martin, G., Marín-Gracia, M., Estivill-Torrús, G et al., (2022). Immune Mechanism of Epileptogenesis and Related Therapeutic Strategies. *Biomedicines*, 10(3), 716.
- Ait-Belgnaoui A, Durand H, Cartier C, Chaumaz G, Eutamene H, Ferrier L et al. 2012. Prevention of gut leakiness by a probiotic treatment leads to attenuated HPA response to an acute psychological stress in rats. *Psychoneuroendocrinology* 37; 1885–95.
- Akkol S. 2017. Effects of Probiotic Consumption on Absence Seizures. *J. Turk. Epilepsi Soc.* 23(2): 51-6.
- Aldawsari HM, Eid BG, Neamatallah T, Zaitone SA, Badr JM. 2017. Anticonvulsant and Neuroprotective Activities of *Phragmanthera austroarabica* Extract in Pentylentetrazole- Kindled Mice. *Evid. Based Complement. Alternat. Med.* 1-13.
- Aleshin VA, Graf AV, Artiukhov AV, Ksenofontov AL, Zavileyskiy LG, Maslova MV et al. 2023. Pentylentetrazole-Induced Seizures Are Increased after Kindling, Exhibiting Vitamin-Responsive Correlations to the Post-Seizures Behavior, Amino Acids Metabolism and Key Metabolic Regulators in the Rat Brain. *Int. J. Mol. Sci.* 24: 1-30.
- Ali MH, Raza Z, Rehman Z, Ashraf W, Anjum SM, Ahmad T et al. 2025. Probiotics and pregabalin combination prevented ictogenesis, neurobehavioral abnormalities and neurodegeneration in pentylentetrazole kindling model of epilepsy. *Brain Res.* 1855: 1-13.
- Allen MJ, Sabir S, Sharma S. GABA receptor. *Stat Pearls Publ.* 2023.

- Alvarado, C. D., & Brewster, A. L. (2021). Hit by a Smooth CD8: T-Cell Attack on Hippocampal Neurons Triggers Limbic Encephalitis and Epilepsy. *Epilepsy Currents*, 21(5), 369–71.
- Amhaoul H, Ali I, Mola M, Van Eetveldt A, Szewczyk K, Missault S et al. 2016. P2X7 receptor antagonism reduces the severity of spontaneous seizures in a chronic model of temporal lobe epilepsy. *Neuropharmacology* 105: 175–85.
- Amiri A, Firoozeh F, Zibaei M, Khaledi A. 2021. Effects of Probiotics on Human Health and Disease: A Review. *Acta Medica Bulg* 48: 95–100.
- Amlerova J, Šroubek J, Angelucci F, Hort J. 2021. Evidences for a Role of Gut Microbiota in Pathogenesis and Management of Epilepsy. *Int. J. Mol. Sci* 22: 1-14.
- Ando M, Amayasu H, Itai T, Yoshida H. 2017. Association between the blood concentrations of ammonia and carnitine/amino acid of schizophrenic patients treated with valproic acid. *BioPsychoSocial Medicine* 11(19):1-8.
- Anwar H, Khan QU, Nadeem N, Pervaiz I, Ali M, Cheema FF. 2020. Epileptic seizures. *Discoveries* 8(2): 1-19.
- Arulsamy A, Tan QY, Balasubramaniam V, O'Brien TJ, Mohd SF. 2020. Gut Microbiota and Epilepsy: A Systematic Review on Their Relationship and Possible Therapeutics. *ACS Chem. Neurosci* 11: 3488–98.
- Bagheri S, Heydari A, Alinaghypour A, Salami M. 2019. Effect of probiotic supplementation on seizure activity and cognitive performance in PTZ-induced chemical kindling. *Epilepsy Behav* 95: 43–50.
- Barker-Haliski M, White HS. 2015. Glutamatergic Mechanisms Associated with Seizures and Epilepsy. *Cold Spring Harb. Perspect. Med* 5: 1-15.
- Barrett E, Ross RP, O'Toole PW, Fitzgerald GF, Stanton C. 2012.  $\gamma$ -Aminobutyric acid production by culturable bacteria from the human intestine. *J. Appl. Microbiol* 113: 411–17.
- Beghi, E. 2020. The Epidemiology of Epilepsy. *Neuroepidemiology* 54: 185–91.

- Beghi E, Hesdorffer D. 2014. Prevalence of epilepsy—An unknown quantity. *Epilepsia*. 55: 963–67.
- Bermudez-Brito M, Plaza-Díaz J, Muñoz-Quezada S, Gómez-Llorente C, Gil A. 2012. Probiotic Mechanisms of Action. *Ann. Nutr. Metab* 61: 160–74.
- Bian X, Shao X, 2024. Advances in the study of gut microbes in pediatric epilepsy. *Epilepsy Behav* 157: 1-6.
- Bin-Khattaf RM, Alonazi MA, Al-Dbass AM, Almnaizel AT, Aloudah HS, Soliman DA et al. 2022. Probiotic Ameliorating Effects of Altered GABA/Glutamate Signaling in a Rodent Model of Autism. *Metabolites* 12(720): 1–12.
- Bosco, D. B., Tian, D., & Wu, L. (2020). Neuroimmune interaction in seizures and epilepsy: focusing on monocyte infiltration. *The FEBS Journal*, 287(22), 4822–37.
- Camfield P, Camfield C. 2015. Incidence, prevalence and aetiology of seizures and epilepsy in children. *Epileptic. Disord* 17: 117–23.
- Carvill GL, McMahon JM, Schneider A, Zemel M, Myers CT, Saykally J et al. 2015. Mutations in the GABA Transporter SLC6A1 Cause Epilepsy with Myoclonic-Atonic Seizures. *Am. J. Hum. Genet* 96: 808–15.
- Chatzikonstantinou S, Gioula G, Kimiskidis VK, McKenna J, Mavroudis I, Kazis D. 2021. The gut microbiome in drug-resistant epilepsy. *Epilepsia Open* 6: 28–37.
- Chen L, Zhu L, Lu D, Wu Z, Han Y, Xu P et al. 2020. Interleukin 4 Affects Epilepsy by Regulating Glial Cells: Potential and Possible Mechanism. *Front. Mol. Neurosci.* 13: 1-11.
- Chen X, Xu D, Yu J, Song XJ, Li X, Cui YL. 2024. Tryptophan Metabolism Disorder-Triggered Diseases, Mechanisms, and Therapeutic Strategies: A Scientometric Review. *Nutrients* 16: 1-26.
- Cheng Y, Mai Q, Zeng X, Wang H, Xiao Y, Tang L et al. 2019. Propionate relieves pentylentetrazol-induced seizures, consequent mitochondrial disruption, neuron necrosis and neurological deficits in mice. *Biochem. Pharmacol* 169: 1-13.

- Chojnowski K, Opielka M, Urbanowicz K, Zawadzka M, Wangin K, Smoleński RT et al. 2025. Untargeted metabolomics reveals key metabolic alterations in pediatric epilepsy with insights into Tryptophan metabolism and the gut–brain axis. *Scientific Reports* 15(1): 1–12.
- Ciltas AC, Toy CE, Güneş H, Yaprak M. 2023. Effects of probiotics on GABA/glutamate and oxidative stress in PTZ- induced acute seizure model in rats. *Epilepsy Res* 195: 1-7.
- Dahlin M, Prast-Nielsen S. 2019. The gut microbiome and epilepsy. *eBioMedicine* 44: 741–46.
- De Caro C, Iannone LF, Citraro R, Striano P, De Sarro G, Constanti A et al. 2019. Can we ‘seize’ the gut microbiota to treat epilepsy? *Neurosci. Biobehav. Rev* 107: 750–64.
- Den Besten G, Van Eunen K, Groen AK, Venema K, Reijngoud DJ, Bakker BM. 2013. The role of short-chain fatty acids in the interplay between diet, gut microbiota, and host energy metabolism. *J. Lipid Res* 54: 2325–40.
- Deshmukh HS, Liu Y, Menkiti OR, Mei J, Dai N, O’Leary CE et al. 2014. The microbiota regulates neutrophil homeostasis and host resistance to *Escherichia coli* K1 sepsis in neonatal mice. *Nat. Med* 20: 524–30.
- Dinan TG, Stilling RM, Stanton C, Cryan JF. 2015. Collective unconscious: How gut microbes shape human behavior. *J. Psychiatr. Res* 63: 1–9.
- Ding M, Lang Y, Shu H, Shao J, Cui L. 2021. Microbiota–Gut–Brain Axis and Epilepsy: A Review on Mechanisms and Potential Therapeutics. *Front. Immunol* 12: 1-16.
- El Aidy S, Dinan TG, Cryan JF. 2014. Immune modulation of the brain-gut-microbe axis. *Front. Microbiol* 5: 1-4.
- El-Fayoumy N, El-Massry H, Hegazy M, Ragab A, Mohamed R, Abdel Alim S. 2016. Role of interleukin-6 in refractory epilepsy. *Egypt. J. Neurol. Psychiatry Neurosurg.* 53, 238-43.

- Eor JY, Son YJ, Kim JY, Kang HC, Youn SE, Kim JH et al. 2021. Neuroprotective effect of both synbiotics and ketogenic diet in a pentylenetetrazol-induced acute seizure murine model. *Epilepsy Res* 174: 1-12.
- Eyo UB, Murugan M, Wu L. 2017. Microglia–Neuron Communication in Epilepsy. *Glia* 65: 5–18.
- Fiest KM, Sauro KM, Wiebe S, Patten SB, Kwon CS, Dykeman J et al. 2017. Prevalence and incidence of epilepsy: A systematic review and meta-analysis of international studies. *Neurology* 88: 296–303.
- Forsythe P, Bienenstock J, Kunze WA. 2014. Vagal Pathways for Microbiome-Brain-Gut Axis Communication, in: Lyte, M., Cryan, J.F. (Eds.), *Microbial Endocrinology: The Microbiota-Gut-Brain Axis in Health and Disease, Advances in Experimental Medicine and Biology*. Springer New York, New York, NY. pp 115–33.
- Gan CL, Zou Y, Xia Y, Zhang T, Chen D, Lan G et al. 2021. Inhibition of Death-associated Protein Kinase 1 protects against Epileptic Seizures in mice. *Int. J. Biol. Sci.* 17: 2356–66.
- Gao K, Mu C, Farzi A, Zhu W. 2020. Tryptophan Metabolism: A Link Between the Gut Microbiota and Brain. *Adv. Nutr* 11: 709–3.
- Goehler LE, Gaykema RPA, Opitz N, Reddaway R, Badr N, Lyte M. 2005. Activation in vagal afferents and central autonomic pathways: Early responses to intestinal infection with *Campylobacter jejuni*. *Brain. Behav. Immun* 19: 334–44.
- Gómez-Eguílaz M, Ramón-Trapero JL, Pérez-Martínez L, Blanco JR. 2018. The beneficial effect of probiotics as a supplementary treatment in drug-resistant epilepsy: a pilot study. *Benef. Microbes* 9: 875–82.
- Grenham S, Clarke G, Cryan JF, Dinan TG. 2011. Brain? Gut? Microbe Communication in Health and Disease. *Front. Physiol* 2: 1-15.
- Hill C, Guarner F, Reid G, Gibson GR, Merenstein DJ, Pot B et al. 2014. The International Scientific Association for Probiotics and Prebiotics consensus statement on the scope and appropriate use of the term probiotic. *Nat. Rev. Gastroenterol. Hepatol* 11: 506–14.

- Holzer P, Farzi A. 2014. Neuropeptides and the Microbiota-Gut-Brain Axis, in: Lyte, M., Cryan, J.F. (Eds.), *Microbial Endocrinology: The Microbiota-Gut-Brain Axis in Health and Disease*, *Advances in Experimental Medicine and Biology*. Springer New York, New York, NY. pp 195–219.
- Huang TH, Lai MC, Chen YS, Huang CW. 2023. The Roles of Glutamate Receptors and Their Antagonists in Status Epilepticus, Refractory Status Epilepticus, and Super-Refractory Status Epilepticus. *Biomedicines* 11(3): 1-17.
- Husna M, Kurniawan SN. 2018. Biomolecular Mechanism of AntiEpileptic Drugs. *MNJ* 4 (01): 38-45.
- Iannone LF, Gómez-Eguílaz M, Citaro R, Russo E. 2020. The potential role of interventions impacting on gut-microbiota in epilepsy. *Expert Rev. Clin. Pharmacol* 13: 423–35.
- Iannone LF, Preda A, Blottièrè HM, Clarke G, Albani D, Belcastro V et al. 2019. Microbiota-gut brain axis involvement in neuropsychiatric disorders. *Expert Rev. Neurother* 19: 1037–50.
- Jeon SJ, Ham J, Park CS, Lee B. 2020. Susceptibility of pentylenetetrazole-induced seizures in mice with *Cereblon* gene knockout. *BMB Rep* 53: 484–89.
- Joly-Amado A, Kulkarni N, Nash KR. 2023. Reelin Signaling in Neurodevelopmental Disorders and Neurodegenerative Diseases. *Brain Sciences* 13(1479): 1-20.
- Kaelberer MM, Buchanan KL, Klein ME, Barth BB, Montoya MM, Shen X et al. 2018. A gut-brain neural circuit for nutrient sensory transduction. *Science* 361: 1-18.
- Khanna S, Tosh PK. 2014. A Clinician’s Primer on the Role of the Microbiome in Human Health and Disease. *Mayo Clin. Proc* 89: 107–14.
- Kilinc E, Ankarali S, Ayhan D, Ankarali H, Torun IE, Cetinkaya A. 2021. Protective effects of long-term probiotic mixture supplementation against pentylenetetrazole-induced seizures, inflammation and oxidative stress in rats. *J. Nutr. Biochem* 98: 1-9.
- Kim N, Yun M, Oh YJ, Choi HJ. 2018. Mind-altering with the gut: Modulation of the gut-brain axis with probiotics. *J. Microbiol* 56, 172–82.

- Kusumastuti, Gunadharma S, Kustiowati E. Pedoman tatalaksana epilepsi. Perdossi. 2014.
- Leite JP, Peixoto-Santos JE. 2019. Glia and extracellular matrix molecules: What are their importance for the electrographic and MRI changes in the epileptogenic zone? *Epilepsy Behav* xxx: 1-8.
- Li D, Bai X, Jiang Y, Cheng Y. 2021. Butyrate alleviates PTZ-induced mitochondrial dysfunction, oxidative stress and neuron apoptosis in mice via Keap1/Nrf2/HO-1 pathway. *Brain Res. Bull* 168: 25–35.
- Li D, Yu S, Long Y, Shi A, Deng J, Ma Y et al. 2022. Tryptophan metabolism: Mechanism-oriented therapy for neurological and psychiatric disorders. *Front. Immunol* 13: 1-18.
- Liddel SA, Guttenplan KA, Clarke LE, Bennett FC, Bohlen CJ et al. 2017. Neurotoxic reactive astrocytes are induced by activated microglia. *Nature*. 1-25.
- Li G, Bauer S, Nowak M, Norwood B, Tackenberg B, Resenow F et al. 2011. Cytokines and epilepsy. *Seizure* 20: 249–56.
- Li W, Wu J, Zeng Y, Zheng W. 2023. Neuroinflammation in epileptogenesis: from pathophysiology to therapeutic strategies. *Front. Immunol* 14: 1-12.
- Liu X, Cao S, Zhang X. 2016. Modulation of Gut Microbiota–Brain Axis by Probiotics, Prebiotics, and Diet. *J. Agric. Food Chem* 63: 7885–95.
- Logsdon AF, Erickson MA, Rhea EM, Salameh TS, Banks WA. 2018. Gut reactions: How the blood–brain barrier connects the microbiome and the brain. *Exp. Biol. Med* 243: 159–65.
- Lum GR, Olson CA, Hsiao EY 2020. Emerging roles for the intestinal microbiome in epilepsy. *Neurobiol. Dis* 135: 1-8.
- Lyte, M. 2011. Probiotics function mechanistically as delivery vehicles for neuroactive compounds: Microbial endocrinology in the design and use of probiotics. *BioEssays* 33: 574–81.
- Mantegazza M, Broccoli V. 2019. SCN 1A /Na V 1.1 channelopathies: Mechanisms in expression systems, animal models, and human iPSC models. *Epilepsia* 60: s25-38.

- Marin-Castañeda LA, Pacheco Aispuro G, Gonzalez-Garibay G, Martínez Zamora CA, Romo-Parra H, Rubio-Osornio M et al. 2025. Interplay of epilepsy and long-term potentiation: implications for memory. *Front. Neurosci* 18: 1-10.
- Markowiak P, Śliżewska K. 2017. Effects of Probiotics, Prebiotics, and Synbiotics on Human Health. *Nutrients* 9: 1-30.
- Mawe GM, Hoffman JM. Serotonin signalling in the gut—functions, dysfunctions and therapeutic targets. 2013. *J. M. Nat. Rev. Gastroenterol. Hepatol.* 1-14.
- Mazzoli R, Pessione E, 2016. The Neuro-endocrinological Role of Microbial Glutamate and GABA Signaling. *Front. Microbiol* 7: 1-17.
- Monteiro ÁB, Alves AF, Ribeiro Portela AC, Oliveira Pires HF, Pessoa De Melo M, Medeiros Vilar Barbosa NM et al. 2024. Pentylentetrazole: A review. *Neurochem. Int* 180: 1-10.
- Mu C, Nikpoor N, Tompkins TA, Choudhary A, Wang M, Marks WN et al. 2022. Targeted gut microbiota manipulation attenuates seizures in a model of infantile spasms syndrome. *JCI Insight* 7: 1-17.
- Olson CA, Vuong HE, Yano JM, Liang QY, Nusbaum DJ, Hsiao EY. 2018. The Gut Microbiota Mediates the Anti-Seizure Effects of the Ketogenic Diet. *Cell* 173(7): 1728-41.
- O'Mahony SM, Clarke G, Borre YE, Dinan TG, Cryan JF. 2015. Serotonin, tryptophan metabolism and the brain-gut-microbiome axis. *Behav. Brain Res* 277: 32–48.
- Passat J, Solek P, 2022. Epilepsi pada Anak: Gambaran Umum. Dalam: *Buku Ajar Neurologi Anak*, 1st ed. IDAI.
- Phoswa WN, Mokgalaboni K. 2023. Immunological Imbalances Associated with Epileptic Seizures in Type 2 Diabetes Mellitus. *Brain Sci* 13(732): 1-12.
- Pitkänen A, Lukasiuk K, Dudek FE, Staley KJ. 2015. Epileptogenesis. *Cold Spring Harb. Perspect. Med* 5: 1-17.
- Pitsch J, Loo KMJ, Gallus M. 2021. Hit by a Smooth CD8: T-Cell Attack on Hippocampal Neurons Triggers Limbic Encephalitis and Epilepsy. *Ann Neurol*

89(4): 666-85.

Popper V, Spurny-Dworak B, Unterholzner J, Reed M, Wechsler T, Kautzky A, et al. 2025. Brain glutamate and gamma-aminobutyric acid levels across COVID-19 lockdowns in patients with recurrent major depressive disorder and healthy individuals. *Scientific Reports* 15(20635): 1-10.

Portnoy E, Polyak B, Inbar D, Kenan G, Rai A, Wehrli SL. 2016. Tracking inflammation in the epileptic rat brain by bi-functional fluorescent and magnetic nanoparticles. *Nanomedicine Nanotechnol. Biol. Med* 12: 1335–45.

Ramli Y. 2022. Neurofisiologi. Dalam: Buku Ajar Neurologi Anak, 1st ed. IDAI, Jakarta.

Rana A, Musto AE. 2018. The role of inflammation in the development of epilepsy. *J. Neuroinflammation* 15(144): 1-12.

Romoli M, Mazzocchetti P, D'Alonzo R, Siliquini S, Rinaldi VE, Verrotti A et al. 2019. Valproic Acid and Epilepsy: From Molecular Mechanisms to Clinical Evidences. *Curr. Neuropharmacol* 17: 926–46.

Rothhammer V, Borucki DM, Tjon EC, Takenaka MC, Chao CC et al. 2018. Microglial control of astrocytes in response to microbial metabolites. *Nature*. 724-48

Roth W, Zadeh K, Vekariya R, Ge Y, Mohamadzadeh M. 2021. Tryptophan Metabolism and Gut-Brain Homeostasis. *International Journal of Molecular Sciences* 22(6): 1-23.

Rostamkhani A, Mirazi N, Hosseini A. 2024. Effect of alpelisib, a selective phosphatidylinositol-3-kinase inhibitor, on seizure development in a rat pentylenetetrazole model. *J. Hell. Vet. Med. Soc* 74: 6473–80.

Safdar A, Ismail F. 2023. A comprehensive review on pharmacological applications and drug-induced toxicity of valproic acid. *Saudi Pharm. J* 31: 265–78.

Sanz P, Rubio T, Garcia-Gimeno MA. 2024. Neuroinflammation and Epilepsy: From Pathophysiology to Therapies Based on Repurposing Drugs. *International Journal of Molecular Sciences* 25(8): 2-16.

Saputra DH. 2022. Peran Diet Ketogenik dalam Tata Laksana Epilepsi. *Cermin Dunia Kedokt* 49: 629–34.

- Sarlo GL, Holton KF. 2021. Brain concentrations of glutamate and GABA in human epilepsy: A review. *Seizure* 91: 213–27.
- Shakoor MU, Tareen FK, Rehman Z, Saghir A, Ashraf W, Anjum SMM, et al. 2024. Probiotics by Modulating Gut–Brain Axis Together With Brivaracetam Mitigate Seizure Progression, Behavioral Incongruities, and Prevented Neurodegeneration in Pentylentetrazole-Kindled Mice. *CNS Neuroscience & Therapeutics* 30(e70078): 1-16.
- Sharon G, Sampson TR, Geschwind DH, Mazmanian SK. 2016. The Central Nervous System and the Gut Microbiome. *Cell*, 167 (4): 915-32.
- Shigetomi E, Saito K, Sano F, Koizumi S. 2019. Aberrant Calcium Signals in Reactive Astrocytes: A Key Process in Neurological Disorders. *Int. J. Mol. Sci* 20: 1-18.
- Shima T, Sakuma H, Suzuki T, Kohyama K, Matsuoka T, Hayashi M et al. 2018. Effects of antiepileptic drugs on microglial properties. *Epilepsy Seizure* 10: 22–32.
- Shimada T, Yamagata K. 2018. Pentylentetrazole-Induced Kindling Mouse Model. *J. Vis. Exp* 136 (e56573): 1-10.
- Shi YQ, Yang HC, He C, Wang YH, Zheng J, Wang XY et al. 2025. Inflammatory links between epilepsy and depression: a review of mechanisms and therapeutic strategies. *Front Neurosci* 19: 1-16.
- Sinha S, Patil SA, Jayalekshmy V, Satishchandra P. 2008. Do cytokines have any role in epilepsy? *Epilepsy Res* 82: 171–76.
- Silva YP, Bernardi A, Frozza RL. 2020. The Role of Short-Chain Fatty Acids From Gut Microbiota in Gut-Brain Communication. *Frontiers in Endocrinology* 11(25): 1-14.
- Soria-castro R, Schcolnik-cabrera A, Rodríguez-lópez G, Campillo-navarro M, Puebla-osorio N, Estrada-parra S et al. 2019. Review Article Exploring the Drug Repurposing Versatility of Valproic Acid as a Multifunctional Regulator of Innate and Adaptive Immune Cells 1-24.
- Strasser B, Gostner JM, Fuchs D. 2016. Mood, food, and cognition: role of tryptophan and serotonin. *Curr. Opin. Clin. Nutr. Metab. Care* 19: 55–61.

- Sumadewi KT, Harkitasari S, Tjandra DC. 2023. Biomolecular mechanisms of epileptic seizures and epilepsy: a review. *Acta Epileptol* 5(28): 1-22.
- Sun Y, Ma J, Li D, Li P, Zhou X, Li Y et al. 2019. Interleukin-10 inhibits interleukin-1 $\beta$  production and inflammasome activation of microglia in epileptic seizures. *J. Neuroinflammation* 16(66): 1-13.
- Tahmasebi S, Oryan S, Mohajerani HR, Akbari N, Palizvan MR. 2020. Probiotics and *Nigella sativa* extract supplementation improved behavioral and electrophysiological effects of PTZ-induced chemical kindling in rats. *Epilepsy Behav* 104: 1-8.
- Tahmasebi S, Bonab SF, Ghafouri-Fard S, Eslami S. 2025. Preventive and therapeutic impact of probiotic supplementation on behavior and inflammatory responses in the PTZ-induced chemical kindling in rats. *Psychopharmacology*: 783–792.
- Tan J, McKenzie C, Potamitis M, Thorburn AN, Mackay CR, Macia L. 2014. The Role of Short-Chain Fatty Acids in Health and Disease, in: *Advances in Immunology*. Elsevier. pp 91–119.
- Terrone G, Pauletti A, Pascente R, Vezzani A. 2016. Preventing epileptogenesis: A realistic goal? *Pharmacol. Res* 110: 96–100.
- Thursby E, Juge N. 2017. Introduction to the human gut microbiota. *Biochem. J* 474: 1823–36.
- Ting Wong CG, Bottiglieri T, Snead OC. 2003. GABA $\gamma$ -hydroxybutyric acid, and neurological disease. *Ann. Neurol* 54: S3–S12.
- Tolou-Ghamari Z, Palizban AA. 2015. Review of Sodium Valproate Clinical and Biochemical Properties. *Zahedan J. Res. Med. Sci* 17(8): 1-6.
- Vezzani A, Balosso S, Ravizza T. 2012. Inflammation and epilepsy. *Handbook of Clinical Neurology. Epilepsy Part I*.
- Victor TR, Tsirka SE. 2020. Microglial contributions to aberrant neurogenesis and pathophysiology of epilepsy. *Neuroimmunol. Neuroinflammation*: 234-247.

- Wall R, Cryan JF, Ross RP, Fitzgerald GF, Dinan TG, Stanton C. 2014. Bacterial Neuroactive Compounds Produced by Psychobiotics, in: Lyte, M., Cryan, J.F. (Eds.), *Microbial Endocrinology: The Microbiota-Gut-Brain Axis in Health and Disease*, *Advances in Experimental Medicine and Biology*. Springer New York, New York, NY. pp 221–239.
- Wang X, Yang C, Yang L, Zhang Y. 2022. Modulating the gut microbiota ameliorates spontaneous seizures and cognitive deficits in rats with kainic acid-induced status epilepticus by inhibiting inflammation and oxidative stress. *Front. Nutr* 9: 1-9.
- Westfall S, Lomis N, Kahouli I, Dia SY, Singh SP, Prakash S. 2017. Microbiome, probiotics and neurodegenerative diseases: deciphering the gut brain axis. *Cell. Mol. Life Sci* 74: 3769–87.
- Wu J, Zhang Y, Yang H, Rao Y, Miao J, Lu X. 2016. Intestinal Microbiota as an Alternative Therapeutic Target for Epilepsy. *Can. J. Infect. Dis. Med. Microbiol* 1-7.
- Wu Q, Wang H, Liu X, Zhao Y, Zhang J. 2022. The Role of the Negative Regulation of Microglia-Mediated Neuroinflammation in Improving Emotional Behavior After Epileptic Seizures. *Front. Neurol* 13: 1-14.
- Xie G, Zhou Q, Qiu CZ, Dai WK, Wang HP, Li YH et al. 2017. Ketogenic diet poses a significant effect on imbalanced gut microbiota in infants with refractory epilepsy. *World J. Gastroenterol* 23: 6164–71.
- Xie W, Cai L, Yu Y, Gao L, Xiao L, He Q et al. 2014. Activation of brain indoleamine 2,3-dioxygenase contributes to epilepsy-associated depressive-like behavior in rats with chronic temporal lobe epilepsy. *J Neuroinflammation* 11(41): 1-10.
- Yin YH, Ahmad N, Makmor-Bakry M. 2013. Pathogenesis of Epilepsy: Challenges in Animal Models. *Iran. J. Basic Med. Sci* 16: 1119-32.
- Yu C, Deng X, Xu D. 2023. Microglia in epilepsy. *Neurobiol. Dis* 185: 1-14.
- Yue Q, Cai M, Xiao B, Zhan Q, Zeng C. 2022. The Microbiota–Gut–Brain Axis and Epilepsy. *Cell. Mol. Neurobiol* 42: 439–53.
- Yunes RA, Poluektova EU, Dyachkova MS, Klimina KM, Kovtun AS, Averina OV et al. 2016. GABA production and structure of *gadB* / *gadC* genes in *Lactobacillus* and *Bifidobacterium* strains from human microbiota. *Anaerobe* 42: 197–204.

Zeng B, Zhang H, Lu Q, Fu Q, Yan Y, Lu W et al. 2023. Identification of five novel SCN1A variants. *Front. Behav. Neurosci* 17: 1-8.

Zhang B, Zou J, Han L, Rensing N, Wong M. 2016. Microglial activation during epileptogenesis in a mouse model of tuberous sclerosis complex. *Epilepsia* 57: 1317–25.

Zmora N, Suez J, Elinav E. 2019. You are what you eat: diet, health and the gut microbiota. *Nat. Rev. Gastroenterol. Hepatol* 16: 35–56.

Zubair A. 2022. A Commentary on Mechanism of Action and Types of Synbiotics. *J Prob Health*.10: 290.

Zubareva OE, Dyomina AV, Kovalenko AA, Roginskaya AI, Melik-Kasumov TB, Korneeva MA et al. 2023. Beneficial Effects of Probiotic *Bifidobacterium longum* in a Lithium–Pilocarpine Model of Temporal Lobe Epilepsy in Rats. *Int. J. Mol. Sci* 24:1-27.

