REFERENCES

Sikka, S. C. (2001). Relative impact of oxidative stress on male reproductive function. *Current Medicinal Chemistry*, *8*(7), 851–862. https://doi.org/10.2174/0929867013373039

Itokawa, H., Kishi, E., Morita, H., Takeya, K., & Iitaka, Y. (1991). Eurylene, a new squalene-type triterpene from Eurycoma longifolia. *Tetrahedron Letters*, *32*(15), 1803–1804.

Low, B.-S., Das, P. K., & Chan, K.-L. (2013). Standardized quassinoid-rich Eurycoma longifolia extract improved spermatogenesis and fertility in male rats via the hypothalamic–pituitary–gonadal axis. *Journal of Ethnopharmacology*, *145*(3), 706–714. https://doi.org/https://doi.org/10.1016/j.jep.2012.11.013

Kuo, P.-C., Shi, L.-S., Damu, A. G., Su, C.-R., Huang, C.-H., Ke, C.-H., Wu, J.-B., Lin, A.-J., Bastow, K. F., Lee, K.-H., & Wu, T.-S. (2003). Cytotoxic and Antimalarial β-Carboline Alkaloids from the Roots of Eurycoma longifolia. *Journal of Natural Products*, *66*(10), 1324–1327. https://doi.org/10.1021/np030277n

Chan, K., O'Neill, M., Phillipson, J., & Warhurst, D. (1986). Plants as Sources of Antimalarial Drugs. Part 3 1 Eurycoma longifolia. *Planta Medica*, *52*, 105–107. https://doi.org/10.1055/s-2007-969091

Itokawa, H., Kishi, E., Morita, H., & Takeya, K. (1992). Cytotoxic Quassinoids and Tirucallane-Type Triterpenes from the Woods of Eurycoma longifolia. *CHEMICAL & PHARMACEUTICAL BULLETIN*, *40*, 1053–1055. https://doi.org/10.1248/cpb.40.1053

Morita, H., Kishi, E., Takeya, K., Itokawa, H., & Iitaka, Y. (1993). Highly oxygenated quassinoids from Eurycoma longifolia. *Phytochemistry*, *33*(3), 691–696. https://doi.org/https://doi.org/10.1016/0031-9422(93)85475-7

Kardono, L. B. S., Angerhofer, C. K., Tsauri, S., Padmawinata, K., Pezzuto, J. M., & Kinghorn, A. D. (1991). Cytotoxic and antimalarial constituents of the roots of Eurycoma longifolia. *Journal of Natural Products*, *54*(5), 1360–1367.

Nordin, B. E. C., Prince, R. L., & Tucker, G. R. R. (2008). Bone density and fracture risk. *Medical Journal of Australia*, *189*(1), 7–8. https://doi.org/10.5694/j.1326-5377.2008.tb01885.x

Morita, H., Kishi, E., Takeya, K., Itokawa, H., & Iitaka, Y. (1993). Highly oxygenated quassinoids from Eurycoma longifolia. *Phytochemistry*, *33*(3), 691–696. https://doi.org/https://doi.org/10.1016/0031-9422(93)85475-7

Ali, J. M., & Saad, J. M. (1993). Biochemical effect of Eurycoma longifolia jack on the sexual behavior, fertility, sex hormone, and glycolysis. *Department of Biochemistry, University of Malaysia: PhD Dissertation*.

Tambi, M., Imran, M. K., & Henkel, R. R. (2012). Standardised water-soluble extract of Eurycoma longifolia, Tongkat ali, as testosterone booster for managing men with late-onset hypogonadism? *Andrologia*, *44*, 226–230.

Melton, L. J., Chrischilles, E. A., Cooper, C., Lane, A. W., & Riggs, B. L. (1992). Perspective how many women have osteoporosis? *Journal of Bone and Mineral Research*, *7*(9), 1005–1010. https://doi.org/10.1002/jbmr.5650070902

Farouk, A.-E., & Benafri, A. (2007). Antibacterial activity of Eurycoma longifolia Jack. A Malaysian medicinal plant. *Saudi Medical Journal*, *28*(9), 1422–1424.

Kamel, H. K. (2005). Male Osteoporosis. *Drugs & Aging*, *22*(9), 741–748. https://doi.org/10.2165/00002512-200522090-00003

Shuid, A. N., Abu Bakar, M. F., Abdul Shukor, T. A., Muhammad, N., Mohamed, N., & Soelaiman, I. N. (2011). The anti-osteoporotic effect of Eurycoma Longifolia in aged orchidectomised rat model. *The Aging Male*, *14*(3), 150–154. https://doi.org/10.3109/13685538.2010.511327

Tambi, M. I. B. M., Imran, M. K., & Henkel, R. R. (2012). Standardised water-soluble extract of Eurycoma longifolia, Tongkat ali, as testosterone booster for managing men with late-onset hypogonadism? *Andrologia*, *44*(SUPPL.1), 226–230. https://doi.org/10.1111/j.1439-0272.2011.01168.x

Lahrita, L., Kato, E., & Kawabata, J. (2015). Uncovering potential of Indonesian medicinal plants on glucose uptake enhancement and lipid suppression in 3T3-L1 adipocytes. *Journal of Ethnopharmacology*, *168*, 229–236. https://doi.org/10.1016/j.jep.2015.03.082

Anders, H.-J., & Fogo, A. B. (2014). Immunopathology of lupus nephritis. *Seminars in Immunopathology*, *36*(4), 443–459. https://doi.org/10.1007/s00281-013-0413-5

Mohd Effendy, N., Mohamed, N., Muhammad, N., Naina Mohamad, I., & Shuid, A. N. (2012). Eurycoma longifolia: Medicinal plant in the prevention and treatment of male osteoporosis due to androgen deficiency. *Evidence-Based Complementary and Alternative Medicine*, *2012*. https://doi.org/10.1155/2012/125761

Kanis, J. A., Johnell, O., Oden, A., Sembo, I., Redlund-Johnell, I., Dawson, A., De Laet, C., & Jonsson, B. (2000). Long-term risk of osteoporotic fracture in Malmö. *Osteoporosis International : A Journal Established as Result of Cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*, *11*(8), 669–674. https://doi.org/10.1007/s001980070064

Bin Mohd Tambi, M. I., & Imran, M. K. (2010). Eurycoma longifolia Jack in managing idiopathic male infertility. *Asian Journal of Andrology*, *12*(3), 376–380. https://doi.org/10.1038/aja.2010.7

Cucak, H., Nielsen Fink, L., Højgaard Pedersen, M., & Rosendahl, A. (2015). Enalapril treatment increases T cell number and promotes polarization towards M1-like macrophages locally in diabetic nephropathy. *International Immunopharmacology*, *25*(1), 30–42. https://doi.org/10.1016/j.intimp.2015.01.003

Cucak, H., Grunnet, L. G., & Rosendahl, A. (2014). Accumulation of M1-like macrophages in type 2 diabetic islets is followed by a systemic shift in macrophage polarization. *Journal of Leukocyte Biology*, *95*(1), 149–160. https://doi.org/10.1189/jlb.0213075

Dang, N., Choo, Y.-Y., Nguyen, T. D., Nam, N., Minh, C., & Lee, J.-H. (2015). 7-Methoxy-(9H-β-Carbolin-1-Il)-(E)-2-Propenoic Acid, a β-Carboline Alkaloid from Eurycoma Longifolia, Exhibits Anti-Inflammatory Effects by Activating the Nrf2/Heme Oxygenase-1 Pathway. *Journal of Cellular Biochemistry*, *117*. https://doi.org/10.1002/jcb.25315

Ricardo, S. D., Goor, H. Van, & Eddy, A. A. (2008). Science in medicine Macrophage diversity in renal injury and repair. *J Clin Invest.*, *118*(11), 3522–3530. https://doi.org/10.1172/JCI36150.3522

Nishida, M., Okumura, Y., Fujimoto, S.-I., Shiraishi, I., Itoi, T., & Hamaoka, K. (2005). Adoptive transfer of macrophages ameliorates renal fibrosis in mice. *Biochemical and Biophysical Research Communications*, *332*(1), 11–16. https://doi.org/10.1016/j.bbrc.2005.04.083

Talbott, S. M., Talbott, J. A., George, A., & Pugh, M. (2013). Effect of Tongkat Ali on stress hormones and psychological mood state in moderately stressed subjects. *Journal of the International Society of Sports Nutrition*, *10*(1), 1. https://doi.org/10.1186/1550-2783-10-28

Husen, R., Pihie, A. H. L., & Nallappan, M. (2004). Screening for antihyperglycaemic activity in several local herbs of Malaysia. *Journal of Ethnopharmacology*, *95*(2–3), 205–208. https://doi.org/10.1016/j.jep.2004.07.004

Bhat, R., & Karim, A. A. (2010). Tongkat Ali (Eurycoma longifolia Jack): a review on its ethnobotany and pharmacological importance. *Fitoterapia*, *81*(7), 669–679. https://doi.org/10.1016/j.fitote.2010.04.006

Kuo, P. C., Damu, A. G., Lee, K. H., & Wu, T. S. (2004). Cytotoxic and antimalarial constituents from the roots of Eurycoma longifolia. *Bioorganic and Medicinal Chemistry*, *12*(3), 537–544. https://doi.org/10.1016/j.bmc.2003.11.017

Ma, L. J., Nakamura, S., Aldigier, J. C., Rossini, M., Yang, H., Liang, X., Nakamura, I., Marcantoni, C., & Fogo, A. B. (2005). Regression of glomerulosclerosis with high-dose angiotensin inhibition is linked to decreased plasminogen activator inhibitor-1. *Journal of the American Society of Nephrology*, *16*(4), 966–976. https://doi.org/10.1681/ASN.2004060492

Yang, H. C., Zuo, Y., & Fogo, A. B. (2010). Models of chronic kidney disease. *Drug Discovery Today: Disease Models*, *7*(1–2), 13–19. https://doi.org/10.1016/j.ddmod.2010.08.002

Gnudi, L. (2015). A new chance to beat diabetic kidney disease: innate immunity and MCP-1: a matter of good and bad macrophages? *Nephrology, Dialysis, Transplantation : Official Publication of the European Dialysis and Transplant Association - European Renal Association*, *30*(4), 525–527. https://doi.org/10.1093/ndt/gfv053

Shen, B., Liu, X., Fan, Y., & Qiu, J. (2014). Macrophages regulate renal fibrosis through modulating TGFβ superfamily signaling. *Inflammation*, *37*(6), 2076–2084. https://doi.org/10.1007/s10753-014-9941-y

Ma, L.-J., & Fogo, A. B. (2003). Model of robust induction of glomerulosclerosis in mice: importance of genetic background. *Kidney International*, *64*(1), 350–355. https://doi.org/10.1046/j.1523-1755.2003.00058.x

Gnudi, L. (2015). A new chance to beat diabetic kidney disease: innate immunity and MCP-1: a matter of good and bad macrophages? *Nephrology, Dialysis, Transplantation : Official Publication of the European Dialysis and Transplant Association - European Renal Association*, *30*(4), 525–527. https://doi.org/10.1093/ndt/gfv053

Rosin, D. L., & Okusa, M. D. (2011). Dangers within: DAMP responses to damage and cell death in kidney disease. *Journal of the American Society of Nephrology*, *22*(3), 416–425. https://doi.org/10.1681/ASN.2010040430

Mulay, S. R., Linkermann, A., & Anders, H. J. (2016). Necroinflammation in Kidney Disease. *Journal of the American Society of Nephrology*, *27*(1), 27–39. https://doi.org/10.1681/ASN.2015040405

Anders, H. J., & Ryu, M. (2011). Renal microenvironments and macrophage phenotypes determine progression or resolution of renal inflammation and fibrosis. *Kidney International*, *80*(9), 915–925. https://doi.org/10.1038/ki.2011.217

Anders, H. J. (2010). Toll-like receptors and danger signaling in kidney injury. *Journal of the American Society of Nephrology*, *21*(8), 1270–1274. https://doi.org/10.1681/ASN.2010030233

Wang, Y., & Harris, D. C. H. (2011). Macrophages in renal disease. *Journal of the American Society of Nephrology*, *22*(1), 21–27. https://doi.org/10.1681/ASN.2010030269

Cao, Q., Harris, D. C. H., & Wang, Y. (2015). Macrophages in kidney injury, inflammation, and fibrosis. *Physiology*, *30*(3), 183–194. https://doi.org/10.1152/physiol.00046.2014

Wang, Y., Wang, Y. P., Zheng, G., Lee, V. W. S., Ouyang, L., Chang, D. H. H., Mahajan, D., Coombs, J., Wang, Y. M., Alexander, S. I., & Harris, D. C. H. (2007). Ex vivo programmed macrophages ameliorate experimental chronic inflammatory renal disease. *Kidney International*, *72*(3), 290–299. https://doi.org/10.1038/sj.ki.5002275

Wilson, H. M., Stewart, K. N., Brown, P. A. J., Anegon, I., Chettibi, S., Rees, A. J., & Kluth, D. C. (2002). Bone-marrow-derived macrophages genetically modified to produce IL-10 reduce injury in experimental glomerulonephritis. *Molecular Therapy*, *6*(6), 710–717. https://doi.org/10.1006/mthe.2002.0802

Gurtner, G. C., Werner, S., Barrandon, Y., & Longaker, M. T. (2008). Wound repair and regeneration. *Nature*, *453*, 314+.

Park, J. S., Svetkauskaite, D., He, Q., Kim, J. Y., Strassheim, D., Ishizaka, A., & Abraham, E. (2004). Involvement of Toll-like Receptors 2 and 4 in Cellular Activation by High Mobility Group Box 1 Protein. *Journal of Biological Chemistry*, *279*(9), 7370–7377. https://doi.org/10.1074/jbc.M306793200

Chen, R., Alvero, A. B., Silasi, D.-A., & Mor, G. (2007). Inflammation, cancer and chemoresistance: taking advantage of the toll-like receptor signaling pathway. *American Journal of Reproductive Immunology (New York, N.Y. : 1989)*, *57*(2), 93–107. https://doi.org/10.1111/j.1600-0897.2006.00441.x

Bowcutt, A. A. (2015). Discovering the e-relationship between babies and early e-literacy: A case study on the responses of babies aged 0-12 months to traditional texts and electronic readers. *Dissertation Abstracts International Section A: Humanities and Social Sciences*, *76*(5-A(E)), No Pagination Specified. https://doi.org/10.1038/nri2215.How

Chen, G. Y., & Nuñez, G. (2010). Sterile inflammation: Sensing and reacting to damage. *Nature Reviews Immunology*, *10*(12), 826–837. https://doi.org/10.1038/nri2873

Cao, Q., Wang, Y., & Harris, D. C. H. (2013). Pathogenic and protective role of macrophages in kidney disease. *American Journal of Physiology. Renal Physiology*, *305*(1), F3–F11. https://doi.org/10.1152/ajprenal.00122.2013

Jonathan Posner, James A. Russell, and B. S. P. (2008). 基因的改变NIH Public Access. *Bone*, *23*(1), 1–7. https://doi.org/10.1038/jid.2014.371

Engler, A. E., Ysasi, A. B., Pihl, R. M. F., Villacorta-Martin, C., Heston, H. M., Richardson, H. M. K., Moniz, N. R., Belkina, A., Mazzilli, S. A., & Rock, J. R. (2020). Airway-Associated Macrophages in Homeostasis and Repair. *SSRN Electronic Journal*, 1–25. https://doi.org/10.2139/ssrn.3639612

Novak, M. L., & Koh, T. J. (2013). Macrophage phenotypes during tissue repair. *Journal of Leukocyte Biology*, *93*(6), 875–881. https://doi.org/10.1189/jlb.1012512

Sorokin, Y., Romero, R., Mele, L., Wapner, R. J., Iams, J. D., Dudley, D. J., Spong, C. Y., Peaceman, A. M., Leveno, K. J., Harper, M., Caritis, S. N., Miodovnik, M., Mercer, B. M., Thorp, J. M., O'Sullivan, M. J., Ramin, S. M., Carpenter, M. W., Rouse, D. J., & Sibai, B. (2010). Maternal serum interleukin-6, C-reactive protein, and matrix metalloproteinase-9 concentrations as risk factors for preterm birth <32 weeks and adverse neonatal outcomes. *American Journal of Perinatology*, *27*(8), 631–640. https://doi.org/10.1055/s-0030-1249366

Holder, B. S., Tower, C. L., Jones, C. J. P., Aplin, J. D., & Abrahams, V. M. (2012). Heightened Pro-Inflammatory Effect of Preeclamptic Placental Microvesicles on Peripheral Blood Immune Cells in Humans. *Biology of Reproduction*, *86*(4). https://doi.org/10.1095/biolreprod.111.094631

Gordon, S. (2007). The macrophage: Past, present and future. *European Journal of Immunology*, *37*(SUPPL. 1). https://doi.org/10.1002/eji.200737638

Porta, C., Paglino, C., Imarisio, I., & Bonomi, L. (2007). Cytokine-based immunotherapy for advanced kidney cancer: past results and future perspectives in the era of molecularly targeted agents. *TheScientificWorldJournal*, *7*, 837–849. https://doi.org/10.1100/tsw.2007.154

Mosser, D. M., & Edwards, J. P. (2009). Nihms84393. *Nat Rev Immunology*, *8*(12), 958–969. https://doi.org/10.1038/nri2448.Exploring

Dale, D. C., Boxer, L., & Liles, W. C. (2008). The phagocytes: neutrophils and monocytes. *Blood*, *112*(4), 935–945. https://doi.org/10.1182/blood-2007-12-077917

Kitamoto, K., Machida, Y., Uchida, J., Izumi, Y., Shiota, M., Nakao, T., Iwao, H., Yukimura, T., Nakatani, T., & Miura, K. (2009). Effects of liposome clodronate on renal leukocyte populations and renal fibrosis in murine obstructive nephropathy. *Journal of Pharmacological Sciences*, *111*(3), 285–292. https://doi.org/10.1254/jphs.09227fp

Mahdi, A. A., Bano, F., Singh, R., Singh, R. K., Siddiqui, M. S., & Hasan, M. (1999). Seminal plasma superoxide dismutase and catalase activities in infertile men. *Medical Science Research*, *27*(3), 201–203.

scholar. (n.d.).

Lee, S., Huen, S., Nishio, H., Nishio, S., Lee, H. K., Choi, B.-S., Ruhrberg, C., & Cantley, L. G. (2011). Distinct macrophage phenotypes contribute to kidney injury and repair. *Journal of the American Society of Nephrology : JASN*, *22*(2), 317–326. https://doi.org/10.1681/ASN.2009060615

Weiss, M., Byrne, A. J., Blazek, K., Saliba, D. G., Pease, J. E., Perocheau, D., Feldmann, M., & Udalova, I. A. (2015). IRF5 controls both acute and chronic inflammation. *Proceedings of the National Academy of Sciences of the United States of America*, *112*(35), 11001–11006. https://doi.org/10.1073/pnas.1506254112

Jo, S.-K., Sung, S.-A., Cho, W.-Y., Go, K.-J., & Kim, H.-K. (2006). Macrophages contribute to the initiation of ischaemic acute renal failure in rats. *Nephrology, Dialysis, Transplantation : Official Publication of the European Dialysis and Transplant Association - European Renal Association*, *21*(5), 1231–1239. https://doi.org/10.1093/ndt/gfk047

Tada, H., Yasuda, F., Otani, K., Doteuchi, M., Ishihara, Y., & Shiro, M. (1991). New antiulcer quassinoids from Eurycoma longifolia. *European Journal of Medicinal Chemistry*, *26*(3), 345–349.

ITOKAWA, H., KISHI, E., MORITA, H., & TAKEYA, K. (1992). Cytotoxic quassinoids and tirucallane-type triterpenes from the woods of Eurycoma longifolia. *Chemical and Pharmaceutical Bulletin*, *40*(4), 1053–1055.

Rubinstein, L. V, Shoemaker, R. H., Paull, K. D., Simon, R. M., Tosini, S., Skehan, P., Scudiero, D. A., Monks, A., & Boyd, M. R. (1990). Comparison of in vitro anticancer-drug-screening data generated with a tetrazolium assay versus a protein assay against a diverse panel of human tumor cell lines. *Journal of the National Cancer Institute*, *82*(13), 1113–1118. https://doi.org/10.1093/jnci/82.13.1113

Ito, J., Chang, F. R., Wang, H. K., Park, Y. K., Ikegaki, M., Kilgore, N., & Lee, K. H. (2001). Anti-AIDS agents. 48. Anti-HIV activity of moronic acid derivatives and the new melliferone-related triterpenoid isolated from

Brazilian propolis. *Journal of Natural Products*, *64*(10), 1278–1281. https://doi.org/10.1021/np010211x

Kuo, P.-C., Shi, L.-S., Damu, A. G., Su, C.-R., Huang, C.-H., Ke, C.-H., Wu, J.-B., Lin, A.-J., Bastow, K. F., & Lee, K.-H. (2003). Cytotoxic and antimalarial β-carboline alkaloids from the roots of Eurycoma longifolia. *Journal of Natural Products*, *66*(10), 1324–1327.

Kuo, P.-C., Shi, L.-S., Damu, A. G., Su, C.-R., Huang, C.-H., Ke, C.-H., Wu, J.-B., Lin, A.-J., Bastow, K. F., & Lee, K.-H. (2003). Cytotoxic and antimalarial β-carboline alkaloids from the roots of Eurycoma longifolia. *Journal of Natural Products*, *66*(10), 1324–1327.

Nikolic-Paterson, D. J., Wang, S., & Lan, H. Y. (2014). Macrophages promote renal fibrosis through direct and indirect mechanisms. *Kidney International Supplements*, *4*(1), 34–38. https://doi.org/10.1038/kisup.2014.7

Manuscript, A. (2016). *Europe PMC Funders Group Dendritic cells and macrophages in the kidney : a spectrum of good and evil*. *10*(November 2013), 625–643. https://doi.org/10.1038/nrneph.2014.170.Dendritic

Martinez, F. O., & Gordon, S. (2014). The M1 and M2 paradigm of macrophage activation: Time for reassessment. *F1000Prime Reports*, *6*(March), 1–13. https://doi.org/10.12703/P6-13

Castoldi, A., De Souza, C. N., Saraiva Câmara, N. O., & Moraes-Vieira, P. M. (2016). The macrophage switch in obesity development. *Frontiers in Immunology*, *6*(JAN), 1–11. https://doi.org/10.3389/fimmu.2015.00637

Mosser, D. M., & Edwards, J. P. (2008). Exploring the full spectrum of macrophage activation. *Nature Reviews. Immunology*, *8*(12), 958–969. https://doi.org/10.1038/nri2448

Lech, M., Gröbmayr, R., Ryu, M., Lorenz, G., Hartter, I., Mulay, S. R., Susanti, H. E., Kobayashi, K. S., Flavell, R. A., & Anders, H.-J. (2014). Macrophage phenotype controls long-term AKI outcomes--kidney regeneration versus atrophy. *Journal of the American Society of Nephrology : JASN*, *25*(2), 292–304. https://doi.org/10.1681/ASN.2013020152

Zhang, M., Singh, A., Harris, R. C., Zhang, M., Yao, B., Yang, S., Jiang, L., Wang, S., & Fan, X. (2012). *CSF-1 signaling mediates recovery from acute kidney injury Find the latest version : CSF-1 signaling mediates recovery from acute kidney injury*. *122*(12), 4519–4532. https://doi.org/10.1172/JCI60363.stem

Review, I. (2008). *Immune activation and inflammation in HIV-1 infection : October 2007*, 231–241. https://doi.org/10.1002/path

Mantovani, A., Sica, A., Sozzani, S., Allavena, P., Vecchi, A., & Locati, M. (2004). The chemokine system in diverse forms of macrophage activation and polarization. *Trends in Immunology*, *25*(12), 677–686. https://doi.org/10.1016/j.it.2004.09.015

Mosser, D. M. (2003). The many faces of macrophage activation. *Journal of Leukocyte Biology*, *73*(2), 209–212. https://doi.org/10.1189/jlb.0602325

Kim, M.-G., Kim, S. C., Ko, Y. S., Lee, H. Y., Jo, S.-K., & Cho, W. (2015). The Role of M2 Macrophages in the Progression of Chronic Kidney Disease following Acute Kidney Injury. *PloS One*, *10*(12), e0143961. https://doi.org/10.1371/journal.pone.0143961

Gratchev, A., Guillot, P., Hakiy, N., Politz, O., Orfanos, C. E., Schledzewski, K., & Goerdt, S. (2001). Alternatively activated macrophages differentially express fibronectin and its splice variants and the extracellular matrix protein betaIG-H3. *Scandinavian Journal of Immunology*, *53*(4), 386–392. https://doi.org/10.1046/j.1365-3083.2001.00885.x

Mantovani, A., Sica, A., Sozzani, S., Allavena, P., Vecchi, A., & Locati, M. (2004). The chemokine system in diverse forms of macrophage activation and polarization. *Trends in Immunology*, *25*(12), 677–686. https://doi.org/10.1016/j.it.2004.09.015

Wang, Y., Wang, Y. P., Zheng, G., Lee, V. W. S., Ouyang, L., Chang, D. H. H., Mahajan, D., Coombs, J., Wang, Y. M., Alexander, S. I., & Harris, D. C. H. (2007). Ex vivo programmed macrophages ameliorate experimental chronic inflammatory renal disease. *Kidney International*, *72*(3), 290–299. https://doi.org/10.1038/sj.ki.5002275

Martinez, F. O., Sica, A., Mantovani, A., & Locati, M. (2008). Macrophage activation and polarization. *Frontiers in Bioscience : A Journal and Virtual Library*, *13*, 453–461. https://doi.org/10.2741/2692

Remuzzi, G., Benigni, A., Remuzzi, A., Remuzzi, G., Benigni, A., & Remuzzi, A. (2006). Mechanisms of progression and regression of renal lesions of chronic nephropathies and diabetes Find the latest version : Science in medicine Mechanisms of progression and regression of renal lesions of chronic nephropathies and diabetes. *The Journal of Clinical Investigation*, *116*(2), 288–296. https://doi.org/10.1172/JCI27699.288

Ricardo, S. D., Goor, H. Van, & Eddy, A. A. (2008). Science in medicine Macrophage diversity in renal injury and repair. *J Clin Invest.*, *118*(11). https://doi.org/10.1172/JCI36150.3522

Alagesan, S., & Griffin, M. D. (2014). Alternatively activated macrophages as therapeutic agents for kidney disease: In vivo stability is a key factor. *Kidney International*, *85*(4), 730–733. https://doi.org/10.1038/ki.2013.405

Cao, Q., Wang, Y., & Harris, D. C. H. (2014). Macrophage heterogeneity, phenotypes, and roles in renal fibrosis. *Kidney International Supplements*, *4*(1), 16–19. https://doi.org/10.1038/kisup.2014.4

et al., C. (2016). 乳鼠心肌提取 HHS Public Access. *Physiology & Behavior*, *176*(1), 139–148. https://doi.org/10.1016/j.physbeh.2017.03.040

Flaquer, M., Franquesa, M., Vidal, A., Bolaños, N., Torras, J., Lloberas, N., Herrero-Fresneda, I., Grinyó, J. M., & Cruzado, J. M. (2012). Hepatocyte growth factor gene therapy enhances infiltration of macrophages and may induce kidney repair in db/db mice as a model of diabetes. *Diabetologia*, *55*(7), 2059–2068. https://doi.org/10.1007/s00125-012-2535-z

de Zeeuw, D., Bekker, P., Henkel, E., Hasslacher, C., Gouni-Berthold, I., Mehling, H., Potarca, A., Tesar, V., Heerspink, H. J. L., & Schall, T. J. (2015). The effect of CCR2 inhibitor CCX140-B on residual albuminuria in patients with type 2 diabetes and nephropathy: a randomised trial. *The Lancet. Diabetes & Endocrinology*, *3*(9), 687–696. https://doi.org/10.1016/S2213-8587(15)00261-2

Athimulam, A., Kumaresan, S., Foo, D., Sarmidi, M., & Aziz, R. (2006). Modelling and Optimization of Eurycoma longifolia Water Extract Production. *Food and Bioproducts Processing - FOOD BIOPROD PROCESS*, *84*, 139–149. https://doi.org/10.1205/fbp.06004

Jayne, D. R., Bruchfeld, A., Schaier, M., Ciechanowski, K., Harper, L., Jadoul, M., Segelmark, M., Selga, D., Szombati, I., Venning, M., Hugo, C., Van Daele, P. L., Viklicky, O., Potarca, A., Schall, T. J., & Bekker, P. (2014). OP0227 Oral C5a Receptor Antagonist CCX168 Phase 2 Clinical TRIAL in

Anca-Associated Renal Vasculitis: *Annals of the Rheumatic Diseases*, *73*(Suppl 2), 148.1-148. https://doi.org/10.1136/annrheumdis-2014-eular.3728

Berger, S. P., & Daha, M. R. (2007). Complement in glomerular injury. *Seminars in Immunopathology*, *29*(4), 375–384. https://doi.org/10.1007/s00281-007-0090-3

Chua, L. S., Amin, N. A. M., Neo, J. C. H., Lee, T. H., Lee, C. T., Sarmidi, M. R., & Aziz, R. A. (2011). LC-MS/MS-based metabolites of Eurycoma longifolia (Tongkat Ali) in Malaysia (Perak and Pahang). *Journal of Chromatography. B, Analytical Technologies in the Biomedical and Life Sciences*, *879*(32), 3909–3919. https://doi.org/10.1016/j.jchromb.2011.11.002

Fiaschetti, G., Grotzer, M. A., Shalaby, T., Castelletti, D., & Arcaro, A. (2011). Quassinoids: From traditional drugs to new cancer therapeutics. *Current Medicinal Chemistry*, *18*(3), 316–328. https://doi.org/10.2174/092986711794839205

Morré, D. J., Grieco, P. A., & Morré, D. M. (1998). Mode of action of the anticancer quassinoids--inhibition of the plasma membrane NADH oxidase. *Life Sciences*, *63*(7), 595–604. https://doi.org/10.1016/s0024-3205(98)00310-5

Hirsh, A. (2003). Male subfertility. *Bmj*, *327*(7416), 669. https://doi.org/10.1136/bmj.327.7416.669

Ang, H. H., Cheang, H. S., & Yusof, A. P. (2000). Effects of Eurycoma longifolia Jack (Tongkat Ali) on the initiation of sexual performance of inexperienced castrated male rats. *Experimental Animals*, *49*(1), 35–38. https://doi.org/10.1538/expanim.49.35

Tran, T. V. A., Malainer, C., Schwaiger, S., Atanasov, A. G., Heiss, E. H., Dirsch, V. M., & Stuppner, H. (2014). NF-ϰB inhibitors from Eurycoma longifolia. *Journal of Natural Products*, *77*(3), 483–488. https://doi.org/10.1021/np400701k

Miyake, K., Tezuka, Y., Awale, S., Li, F., & Kadota, S. (2009). Quassinoids from Eurycoma longifolia. *Journal of Natural Products*, *72*(12), 2135–2140. https://doi.org/10.1021/np900486f

Mahfudh, N., & Pihie, A. H. L. (2008). Eurycomanone induces apoptosis through the up-regulation of p53 in human cervical carcinoma cells. *Journal of Cancer Molecules*, *4*(4), 109–115.

Chan, K., LEE, S. P., Sam, T. W., & Han, B. (1989). A quassinoid glycoside from the roots of Eurycoma longifolia. *Phytochemistry*, *28*, 2857–2859. https://doi.org/10.1016/S0031-9422(00)98108-1

White-Cooper, H., & Bausek, N. (2010). Evolution and spermatogenesis. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *365*(1546), 1465–1480. https://doi.org/10.1098/rstb.2009.0323

Sharlip, I. D., Jarow, J. P., Belker, A. M., Lipshultz, L. I., Sigman, M., Thomas, A. J., Schlegel, P. N., Howards, S. S., Nehra, A., Damewood, M. D., Overstreet, J. W., & Sadovsky, R. (2002). Best practice policies for male infertility. *Fertility and Sterility*, *77*(5), 873–882. https://doi.org/10.1016/s0015-0282(02)03105-9

Brugh, V. M. 3rd, & Lipshultz, L. I. (2004). Male factor infertility: evaluation and management. *The Medical Clinics of North America*, *88*(2), 367–385. https://doi.org/10.1016/S0025-7125(03)00150-0

Park, S., Nhiem, N. X., Kiem, P. Van, Minh, C. Van, Tai, B. H., Kim, N., Yoo, H. H., Song, J.-H., Ko, H.-J., & Kim, S. H. (2014). Five new quassinoids and cytotoxic constituents from the roots of Eurycoma longifolia. *Bioorganic & Medicinal Chemistry Letters*, *24*(16), 3835–3840. https://doi.org/https://doi.org/10.1016/j.bmcl.2014.06.058

Meng, D., Li, X., Han, L., Zhang, L., An, W., & Li, X. (2014). Four new quassinoids from the roots of Eurycoma longifolia Jack. *Fitoterapia*, *92*, 105–110. https://doi.org/https://doi.org/10.1016/j.fitote.2013.10.009

Darise, M., Kohda, H., Mizutani, K., & Tanaka, O. (1982). Eurycomanone and eurycomanol, quassinoids from the roots of Eurycoma longifolia. *Phytochemistry*, *21*(8), 2091–2093. https://doi.org/https://doi.org/10.1016/0031-9422(82)83050-1

Chan, K. L., Choo, C. Y., Abdullah, N. R., & Ismail, Z. (2004). Antiplasmodial studies of Eurycoma longifolia Jack using the lactate dehydrogenase assay of Plasmodium falciparum. *Journal of Ethnopharmacology*, *92*(2–3), 223–227. https://doi.org/10.1016/j.jep.2004.02.025

Low, B. S., Teh, C. H., Yuen, K. H., & Chan, K. L. (2011). Physico-chemical Effects of the major quassinoids in a standardized Eurycoma longifolia extract (Fr 2) on the bioavailability and pharmacokinetic properties, and their implications for oral antimalarial activity. *Natural Product Communications*, *6*(3), 337–341. https://doi.org/10.1177/1934578x1100600307

Nadjm, B., & Behrens, R. H. (2012). Malaria: an update for physicians. *Infectious Disease Clinics of North America*, *26*(2), 243–259. https://doi.org/10.1016/j.idc.2012.03.010

Taylor, Steve M; Parobek, Christian M; Fairhurst, R. M. (2013). Malaria : a Systematic Review and Meta-Analysis. *National Institution of Health*, *12*(6), 457–468. https://doi.org/10.1016/S1473-3099(12)70055-5.Impact

Low, B. S., Choi, S. B., Abdul Wahab, H., Kumar Das, P., & Chan, K. L. (2013). Eurycomanone, the major quassinoid in Eurycoma longifolia root extract increases spermatogenesis by inhibiting the activity of phosphodiesterase and aromatase in steroidogenesis. *Journal of Ethnopharmacology*, *149*(1), 201–207. https://doi.org/10.1016/j.jep.2013.06.023

Ismail, S. B., Wan Mohammad, W. M. Z., George, A., Nik Hussain, N. H., Musthapa Kamal, Z. M., & Liske, E. (2012). Randomized clinical trial on the use of PHYSTA freeze-dried water extract of Eurycoma longifolia for the improvement of quality of life and sexual well-being in men. *Evidence-Based Complementary and Alternative Medicine*, *2012*. https://doi.org/10.1155/2012/429268

Browne, O. T., & Bhandari, S. (2012). Interpreting and investigating proteinuria. *BMJ : British Medical Journal*, *344*, e2339. https://doi.org/10.1136/bmj.e2339

Lozano, R., Naghavi, M., Foreman, K., Lim, S., Shibuya, K., Aboyans, V., Abraham, J., Adair, T., Aggarwal, R., Ahn, S. Y., Alvarado, M., Anderson, H. R., Anderson, L. M., Andrews, K. G., Atkinson, C., Baddour, L. M., Barker-Collo, S., Bartels, D. H., Bell, M. L., … Memish, Z. A. (2012). Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet (London, England)*, *380*(9859), 2095–2128. https://doi.org/10.1016/S0140-6736(12)61728-0

Fraser, S. D. S., Roderick, P. J., McIntyre, N. J., Harris, S., McIntyre, C., Fluck, R., & Taal, M. W. (2014). Assessment of proteinuria in patients with chronic kidney disease stage 3: Albuminuria and non-albumin proteinuria. *PLoS ONE*, *9*(5). https://doi.org/10.1371/journal.pone.0098261

Johnson, D. W. (2011). Global proteinuria guidelines: Are we nearly there yet? *Clinical Biochemist Reviews*, *32*(2), 89–95.

Peralta, C. A., Katz, R., Sarnak, M. J., Ix, J., Fried, L. F., De Boer, I., Palmas, W., Siscovick, D., Levey, A. S., & Shlipak, M. G. (2011). Cystatin C identifies chronic kidney disease patients at higher risk for complications. *Journal of the American Society of Nephrology : JASN*, *22*(1), 147–155. https://doi.org/10.1681/ASN.2010050483

Thomas, R., Kanso, A., & Sedor, J. R. (2008). Chronic Kidney Disease and Its Complications. *Primary Care - Clinics in Office Practice*, *35*(2), 329–344. https://doi.org/10.1016/j.pop.2008.01.008

Lamb, E. J., MacKenzie, F., & Stevens, P. E. (2009). How should proteinuria be detected and measured? *Annals of Clinical Biochemistry*, *46*(3), 205–217. https://doi.org/10.1258/acb.2009.009007

Coresh, J., Selvin, E., Stevens, L. A., Manzi, J., Kusek, J. W., Eggers, P., Van Lente, F., & Levey, A. S. (2007). Prevalence of Chronic Kidney Disease in the United States. *JAMA*, *298*(17), 2038–2047. https://doi.org/10.1001/jama.298.17.2038

Coresh, J., Astor, B. C., Greene, T., Eknoyan, G., & Levey, A. S. (2003). Prevalence of chronic kidney disease and decreased kidney function in the adult US population: Third National Health and Nutrition Examination Survey. *American Journal of Kidney Diseases : The Official Journal of the*

National Kidney Foundation, *41*(1), 1–12. https://doi.org/10.1053/ajkd.2003.50007

Couser, W. G., Remuzzi, G., Mendis, S., & Tonelli, M. (2011). The contribution of chronic kidney disease to the global burden of major noncommunicable diseases. *Kidney International*, *80*(12), 1258–1270. https://doi.org/10.1038/ki.2011.368

Fujii, H., & Joki, N. (2017). Mineral metabolism and cardiovascular disease in CKD. *Clinical and Experimental Nephrology*, *21*(Suppl 1), 53–63. https://doi.org/10.1007/s10157-016-1363-8

Wright, J. T., Williamson, J. D., Whelton, P. K., Snyder, J. K., Sink, K. M., Rocco, M. V., Reboussin, D. M., Rahman, M., Oparil, S., Lewis, C. E., Kimmel, P. L., Johnson, K. C., Goff, D. C., Fine, L. J., Cutler, J. A., Cushman, W. C., Cheung, A. K., & Ambrosius, W. T. (2015). A randomized trial of intensive versus standard blood-pressure control. *New England Journal of Medicine*, *373*(22), 2103–2116. https://doi.org/10.1056/NEJMoa1511939

Bello, A. K., Alrukhaimi, M., Ashuntantang, G. E., Basnet, S., Rotter, R. C., Douthat, W. G., Kazancioglu, R., Köttgen, A., Nangaku, M., Powe, N. R., White, S. L., Wheeler, D. C., & Moe, O. (2017). Complications of chronic kidney disease: current state, knowledge gaps, and strategy for action.

Kidney International Supplements, *7*(2), 122–129. https://doi.org/10.1016/j.kisu.2017.07.007

Dreyer, G., Hull, S., Aitken, Z., Chesser, A., & Yaqoob, M. M. (2009). The effect of ethnicity on the prevalence of diabetes and associated chronic kidney disease. *QJM : Monthly Journal of the Association of Physicians*, *102*(4), 261–269. https://doi.org/10.1093/qjmed/hcn177

Goldsmith, D., Ritz, E., & Covic, A. (2004). Vascular calcification: A stiff challenge for the nephrologist - Does preventing bone disease cause arterial disease? *Kidney International*, *66*(4), 1315–1333. https://doi.org/10.1111/j.1523-1755.2004.00895.x

Hossain, M. P., Palmer, D., Goyder, E., & El Nahas, A. M. (2012). Social deprivation and prevalence of chronic kidney disease in the UK: workload implications for primary care. *QJM: An International Journal of Medicine*, *105*(2), 167–175. https://doi.org/10.1093/qjmed/hcr153

Fraser, S. D. S., Aitken, G., Taal, M. W., Mindell, J. S., Moon, G., Day, J., O'Donoghue, D., & Roderick, P. J. (2015). Exploration of chronic kidney disease prevalence estimates using new measures of kidney function in the health survey for England. *PLoS ONE*, *10*(2), 1–16. https://doi.org/10.1371/journal.pone.0118676

O'Callaghan, C. A., Shine, B., & Lasserson, D. S. (2011). Chronic kidney disease: A large-scale population-based study of the effects of introducing the CKD-

EPI formula for eGFR reporting. *BMJ Open*, *1*(2), 1–10. https://doi.org/10.1136/bmjopen-2011-000308

Hallan, S. I., Coresh, J., Astor, B. C., Åsberg, A., Powe, N. R., Romundstad, S., Hallan, H. A., Lydersen, S., & Holmen, J. (2006). International comparison of the relationship of chronic kidney disease prevalence and ESRD risk. *Journal of the American Society of Nephrology*, *17*(8), 2275–2284. https://doi.org/10.1681/ASN.2005121273

Al Nasser, M. S., Ali, A. S., Sattar, M. A. A., Abdulfattah, E. H., Khan, L. M., & Al Alsheikh, K. A. (2016). Therapeutic Drug Monitoring of Tacrolimus in Saudi Kidney Transplant Patients. *Journal of Nephrology & Therapeutics*, *06*(05), 604–612. https://doi.org/10.4172/2161-0959.1000264

Tam, F. W. K., & Ong, A. C. M. (2020). Renal monocyte chemoattractant protein-1: an emerging universal biomarker and therapeutic target for kidney diseases? *Nephrology Dialysis Transplantation*, *35*(2), 198–203. https://doi.org/10.1093/ndt/gfz082

Riskesdas, K. (2018). Hasil Utama Riset Kesehata Dasar (RISKESDAS). *Journal of Physics A: Mathematical and Theoretical*, *44*(8), 1–200. https://doi.org/10.1088/1751-8113/44/8/085201

Kasiske, B. (2014). KDIGO guideline on CKD. *Kidney International Supplements*, *4*(1), 1–66.

Gregg, L. P., Tio, M. C., Li, X., Adams-Huet, B., Lemos, J. A. D., & Hedayati, S. S. (2018). Association of Monocyte Chemoattractant Protein-1 with Death and Atherosclerotic Events in Chronic Kidney Disease. *American Journal of Nephrology*, *47*(6), 395–405. https://doi.org/10.1159/000488806

Guiteras, R., Flaquer, M., & Cruzado, J. M. (2016). Macrophage in chronic kidney disease. *Clinical Kidney Journal*, *9*(6), 765–771. https://doi.org/10.1093/ckj/sfw096

Luyckx, V. A., Stanifer, J. W., & Tonelli, M. (2018). World Health Organization. Global Burden Of Kidney Disea. *Bulletin of the World Health Organization*, *March*, 414–422. https://www.who.int/bulletin/volumes/96/6/17-206441-ab/es/

Putri, A. Y., & Thaha, M. (2014). Role of oxidative stress on chronic kidney disease progression. *Acta Medica Indonesiana*, *46*(3), 244–252.

O’Callaghan, C. A., Shine, B., & Lasserson, D. S. (2011). Chronic kidney disease: A large-scale population-based study of the effects of introducing the CKD-EPI formula for eGFR reporting. *BMJ Open*, *1*(2), 1–10. https://doi.org/10.1136/bmjopen-2011-000308

Hajjouli, S., Chateauvieux, S., Teiten, M. H., Orlikova, B., Schumacher, M., Dicato, M., Choo, C. Y., & Diederich, M. (2014). Eurycomanone and eurycomanol from Eurycoma longifolia jack as regulators of signaling pathways involved in proliferation, cell death and inflammation. *Molecules*, *19*(9), 14649–14666. https://doi.org/10.3390/molecules190914649

Neusser, M. A., Lindenmeyer, M. T., Edenhofer, I., Gaiser, S., Kretzler, M., Regele, H., Segerer, S., & Cohen, C. D. (2011). Intrarenal production of B-cell survival factors in human lupus nephritis. *Modern Pathology : An Official Journal of the United States and Canadian Academy of Pathology, Inc*, *24*(1), 98–107. https://doi.org/10.1038/modpathol.2010.184

Fraser, S., & Blakeman, T. (2016). Chronic kidney disease: identification and management in primary care. *Pragmatic and Observational Research*, *Volume 7*, 21–32. https://doi.org/10.2147/por.s97310

Hodgin, J. B., Nair, V., Zhang, H., Randolph, A., Harris, R. C., Nelson, R. G., Weil, E. J., Cavalcoli, J. D., Patel, J. M., Brosius, F. C., & Kretzler, M. (2013). Identification of cross-species shared transcriptional networks of diabetic nephropathy in human and mouse glomeruli. *Diabetes*, *62*(1), 299–308. https://doi.org/10.2337/db11-1667

Marrero, M. B., Banes-Berceli, A. K., Stern, D. M., & Eaton, D. C. (2006). Role of the JAK/STAT signaling pathway in diabetic nephropathy. *American Journal of Physiology - Renal Physiology*, *290*(4), 762–768. https://doi.org/10.1152/ajprenal.00181.2005

Berthier, C. C., Zhang, H., Schin, M., Henger, A., Nelson, R. G., Yee, B., Boucherot, A., Neusser, M. A., Cohen, C. D., Carter-Su, C., Argetsinger, L.

S., Rastaldi, M. P., Brosius, F. C., & Kretzler, M. (2009). Enhanced expression of Janus kinase-signal transducer and activator of transcription pathway members in human diabetic nephropathy. *Diabetes*, *58*(2), 469–477. https://doi.org/10.2337/db08-1328

Khan, Y. H., Sarriff, A., Adnan, A. S., Khan, A. H., & Mallhi, T. H. (2016). Chronic kidney disease, fluid overload and diuretics: A complicated triangle. *PLoS ONE*, *11*(7), 1–13. https://doi.org/10.1371/journal.pone.0159335

Kraut, J. A., & Madias, N. E. (2016). Metabolic Acidosis of CKD: An Update. *American Journal of Kidney Diseases : The Official Journal of the National Kidney Foundation*, *67*(2), 307–317. https://doi.org/10.1053/j.ajkd.2015.08.028

Seok, S. J., Lee, E. S., Kim, G. T., Hyun, M., Lee, J. H., Chen, S., Choi, R., Kim, H. M., Lee, E. Y., & Chung, C. H. (2013). Blockade of CCL2/CCR2 signalling ameliorates diabetic nephropathy in db/db mice. *Nephrology Dialysis Transplantation*, *28*(7), 1700–1710. https://doi.org/10.1093/ndt/gfs555

Morris, S. M., Gao, T., Cooper, T. K., Kepka-Lenhart, D., & Awad, A. S. (2011). Arginase-2 mediates diabetic renal injury. *Diabetes*, *60*(11), 3015–3022. https://doi.org/10.2337/db11-0901

Urquhart-Secord, R., Craig, J. C., Hemmelgarn, B., Tam-Tham, H., Manns, B., Howell, M., Polkinghorne, K. R., Kerr, P. G., Harris, D. C., Thompson, S., Schick-Makaroff, K., Wheeler, D. C., van Biesen, W., Winkelmayer, W. C., Johnson, D. W., Howard, K., Evangelidis, N., & Tong, A. (2016). Patient and Caregiver Priorities for Outcomes in Hemodialysis: An International Nominal Group Technique Study. *American Journal of Kidney Diseases : The Official Journal of the National Kidney Foundation*, *68*(3), 444–454. https://doi.org/10.1053/j.ajkd.2016.02.037

Combs, S. A., Teixeira, J. P., & Germain, M. J. (2015). Pruritus in Kidney Disease. *Seminars in Nephrology*, *35*(4), 383–391. https://doi.org/10.1016/j.semnephrol.2015.06.009

Wiederkehr, M., & Krapf, R. (2001). Metabolic and endocrine effects of metabolic acidosis in humans. *Swiss Medical Weekly*, *131*(9–10), 127–132.

Gaggl, M., Sliber, C., & Sunder-Plassmann, G. (2014). Effect of oral alkali supplementation on progression of chronic kidney disease. *Current Hypertension Reviews*, *10*(2), 112–120. https://doi.org/10.2174/1573402111666141231123314

Zinman, B., Wanner, C., Lachin, J. M., Fitchett, D., Bluhmki, E., Hantel, S., Mattheus, M., Devins, T., Johansen, O. E., Woerle, H. J., Broedl, U. C., Inzucchi, S. E., Aizenberg, D., Ulla, M., Waitman, J., De Loredo, L., Farías, J., Fideleff, H., Lagrutta, M., … Hieke, S. (2015). Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. *New England*

Journal of Medicine, *373*(22), 2117–2128. https://doi.org/10.1056/NEJMoa1504720

Tuttle, K. R., Brosius, F. C., Adler, S. G., Kretzler, M., Mehta, R. L., Tumlin, J. A., Tanaka, Y., Haneda, M., Liu, J., Silk, M. E., Cardillo, T. E., Duffin, K. L., Haas, J. V., Macias, W. L., Nunes, F. P., & Janes, J. M. (2018). JAK1/JAK2 inhibition by baricitinib in diabetic kidney disease: Results from a Phase 2 randomized controlled clinical trial. *Nephrology Dialysis Transplantation*, *33*(11), 1950–1959. https://doi.org/10.1093/ndt/gfx377

Grandaliano, G., Gesualdo, L., Bartoli, F., Ranieri, E., Monno, R., Leggio, A., Paradies, G., Caldarulo, E., Infante, B., & Schena, F. P. (2000). MCP-1 and EGF renal expression and urine excretion in human congenital obstructive nephropathy. *Kidney International*, *58*(1), 182–192. https://doi.org/10.1046/j.1523-1755.2000.00153.x

Dimmock & Lawlor. (2017). 乳鼠心肌提取 HHS Public Access. *Physiology & Behavior*, *176*(12), 139–148. https://doi.org/10.1016/j.physbeh.2017.03.040

Deshmane, S. L., Kremlev, S., Amini, S., & Sawaya, B. E. (2009). Monocyte chemoattractant protein-1 (MCP-1): an overview. *Journal of Interferon & Cytokine Research : The Official Journal of the International Society for Interferon and Cytokine Research*, *29*(6), 313–326. https://doi.org/10.1089/jir.2008.0027

Mellado, M., Rodríguez-Frade, J. M., Aragay, A., del Real, G., Martín, A. M., Vila-Coro, A. J., Serrano, A., Mayor, F. J., & Martínez-A, C. (1998). The chemokine monocyte chemotactic protein 1 triggers Janus kinase 2 activation and tyrosine phosphorylation of the CCR2B receptor. *Journal of Immunology (Baltimore, Md. : 1950)*, *161*(2), 805–813.

Titan, S. M., Vieira, J. M. J., Dominguez, W. V, Moreira, S. R. S., Pereira, A. B., Barros, R. T., & Zatz, R. (2012). Urinary MCP-1 and RBP: independent predictors of renal outcome in macroalbuminuric diabetic nephropathy. *Journal of Diabetes and Its Complications*, *26*(6), 546–553. https://doi.org/10.1016/j.jdiacomp.2012.06.006

Wada, T., Furuichi, K., Sakai, N., Iwata, Y., Yoshimoto, K., Shimizu, M., Takeda, S. I., Takasawa, K., Yoshimura, M., Kida, H., Kobayashi, K. I., Mukaida, N., Naito, T., Matsushima, K., & Yokoyama, H. (2000). Up-regulation of monocyte chemoattractant protein-1 in tubulointerstitial lesions of human diabetic nephropathy. *Kidney International*, *58*(4), 1492–1499. https://doi.org/10.1046/j.1523-1755.2000.00311.x

Eardley, K. S., Zehnder, D., Quinkler, M., Lepenies, J., Bates, R. L., Savage, C. O., Howie, A. J., Adu, D., & Cockwell, P. (2006). The relationship between albuminuria, MCP-1/CCL2, and interstitial macrophages in chronic kidney disease. *Kidney International*, *69*(7), 1189–1197. https://doi.org/10.1038/sj.ki.5000212

Heerspink, H. J. L., Kröpelin, T. F., Hoekman, J., & de Zeeuw, D. (2015). Drug-Induced Reduction in Albuminuria Is Associated with Subsequent Renoprotection: A Meta-Analysis. *Journal of the American Society of Nephrology : JASN*, *26*(8), 2055–2064. https://doi.org/10.1681/ASN.2014070688

Bakris, G. L., Agarwal, R., Chan, J. C., Cooper, M. E., Gansevoort, R. T., Haller, H., Remuzzi, G., Rossing, P., Schmieder, R. E., Nowack, C., Kolkhof, P., Joseph, A., Pieper, A., Kimmeskamp-Kirschbaum, N., & Ruilope, L. M. (2015). Effect of Finerenone on Albuminuria in Patients With Diabetic Nephropathy: A Randomized Clinical Trial. *JAMA*, *314*(9), 884–894. https://doi.org/10.1001/jama.2015.10081

Barnett, A. H., Mithal, A., Manassie, J., Jones, R., Rattunde, H., Woerle, H. J., & Broedl, U. C. (2014). Efficacy and safety of empagliflozin added to existing antidiabetes treatment in patients with type 2 diabetes and chronic kidney disease: a randomised, double-blind, placebo-controlled trial. *The Lancet. Diabetes & Endocrinology*, *2*(5), 369–384. https://doi.org/10.1016/S2213-8587(13)70208-0

Vallon, V. (2014). Do tubular changes in the diabetic kidney affect the susceptibility to acute kidney injury? *Nephron - Clinical Practice*, *127*(1–4), 133–138. https://doi.org/10.1159/000363554

Gembardt, F., Bartaun, C., Jarzebska, N., Mayoux, E., Todorov, V. T., Hohenstein, B., & Hugo, C. (2014). The SGLT2 inhibitor empagliflozin ameliorates early features of diabetic nephropathy in BTBR ob/ob type 2 diabetic mice with and without hypertension. *American Journal of Physiology - Renal Physiology*, *307*(3), 317–325. https://doi.org/10.1152/ajprenal.00145.2014

Cravedi, P., Ruggenenti, P., & Remuzzi, G. (2010). Which antihypertensive drugs are the most nephroprotective and why? *Expert Opinion on Pharmacotherapy*, *11*, 2651–2663. https://doi.org/10.1517/14656566.2010.521742

Yavin, Y., Mansfield, T. A., Ptaszynska, A., Johnsson, K., Parikh, S., & Johnsson, E. (2016). Effect of the SGLT2 Inhibitor Dapagliflozin on Potassium Levels in Patients with Type 2 Diabetes Mellitus: A Pooled Analysis. *Diabetes Therapy : Research, Treatment and Education of Diabetes and Related Disorders*, *7*(1), 125–137. https://doi.org/10.1007/s13300-015-0150-y

Cherney, D. Z. I., Perkins, B. A., Soleymanlou, N., Maione, M., Lai, V., Lee, A., Fagan, N. M., Woerle, H. J., Johansen, O. E., Broedl, U. C., & von Eynatten, M. (2014). Renal hemodynamic effect of sodium-glucose cotransporter 2 inhibition in patients with type 1 diabetes mellitus. *Circulation*, *129*(5), 587–597. https://doi.org/10.1161/CIRCULATIONAHA.113.005081

Holtkamp, F. A., De Zeeuw, D., Thomas, M. C., Cooper, M. E., De Graeff, P. A., Hillege, H. J. L., Parving, H. H., Brenner, B. M., Shahinfar, S., & Heerspink, H. J. L. (2011). An acute fall in estimated glomerular filtration rate during treatment with losartan predicts a slower decrease in long-term renal function. *Kidney International*, *80*(3), 282–287. https://doi.org/10.1038/ki.2011.79

Fried, L. F., Emanuele, N., Zhang, J. H., Brophy, M., Conner, T. A., Duckworth, W., Leehey, D. J., McCullough, P. A., O’Connor, T., Palevsky, P. M., Reilly, R. F., Seliger, S. L., Warren, S. R., Watnick, S., Peduzzi, P., & Guarino, P. (2013). Combined angiotensin inhibition for the treatment of diabetic nephropathy. *New England Journal of Medicine*, *369*(20), 1892–1903. https://doi.org/10.1056/NEJMoa1303154

Breyer, M. D., & Susztak, K. (2016). The next generation of therapeutics for chronic kidney disease. *Nature Reviews. Drug Discovery*, *15*(8), 568–588. https://doi.org/10.1038/nrd.2016.67

Fan, F. H., Zhang, X., Guo, H. Z., Xie, D., Ping, Y. C., Wei, R. Z., Jian, P. J., Liang, M., Guo, B. W., Zheng, R. L., & Ren, W. G. (2006). Efficacy and safety of benazepril for advanced chronic renal insufficiency. *New England Journal of Medicine*, *354*(2), 131–140. https://doi.org/10.1056/NEJMoa053107

Bakris, G. L., Pitt, B., Weir, M. R., Freeman, M. W., Mayo, M. R., Garza, D., Stasiv, Y., Zawadzki, R., Berman, L., & Bushinsky, D. A. (2015). Effect of patiromer on serum potassium level in patients with hyperkalemia and diabetic kidney disease the AMETHYST-DN randomized clinical trial. *JAMA - Journal of the American Medical Association*, *314*(2), 151–161. https://doi.org/10.1001/jama.2015.7446

Mehdi, U., & Toto, R. D. (2009). Anemia, diabetes, and chronic kidney disease. *Diabetes Care*, *32*(7), 1320–1326. https://doi.org/10.2337/dc08-0779

Schjoedt, K. J., Rossing, K., Juhl, T. R., Boomsma, F., Tarnow, L., Rossing, P., & Parving, H. H. (2006). Beneficial impact of spironolactone on nephrotic range albuminuria in diabetic nephropathy. *Kidney International*, *70*(3), 536–542. https://doi.org/10.1038/sj.ki.5001580

Li, S. Y., Huang, P. H., Yang, A. H., Tarng, D. C., Yang, W. C., Lin, C. C., Chen, J. W., Schmid-Schönbein, G., & Lin, S. J. (2014). Matrix metalloproteinase-9 deficiency attenuates diabetic nephropathy by modulation of podocyte functions and dedifferentiation. *Kidney International*, *86*(2), 358–369. https://doi.org/10.1038/ki.2014.67

Sandborn, W. J., Ghosh, S., Panes, J., Vranic, I., Su, C., Rousell, S., & Niezychowski, W. (2012). Tofacitinib, an oral Janus kinase inhibitor, in active ulcerative colitis. *New England Journal of Medicine*, *367*(7), 616–624. https://doi.org/10.1056/NEJMoa1112168

Woroniecka, K. I., Park, A. S. D., Mohtat, D., Thomas, D. B., Pullman, J. M., & Susztak, K. (2011). Transcriptome analysis of human diabetic kidney disease. *Diabetes*, *60*(9), 2354–2369. https://doi.org/10.2337/db10-1181

Stark, G. R., & Darnell, J. E. J. (2012). The JAK-STAT pathway at twenty. *Immunity*, *36*(4), 503–514. https://doi.org/10.1016/j.immuni.2012.03.013

Guan, L.-Z., Tong, Q., & Xu, J. (2015). Elevated serum levels of mannose-binding lectin and diabetic nephropathy in type 2 diabetes. *PloS One*, *10*(3), e0119699. https://doi.org/10.1371/journal.pone.0119699

Murray, P. J. (2007). The JAK-STAT Signaling Pathway: Input and Output Integration. *The Journal of Immunology*, *178*(5), 2623–2629. https://doi.org/10.4049/jimmunol.178.5.2623

Fleischmann, R., Kremer, J., Cush, J., Schulze-Koops, H., Connell, C. A., Bradley, J. D., Gruben, D., Wallenstein, G. V., Zwillich, S. H., & Kanik, K. S. (2012). Placebo-controlled trial of tofacitinib monotherapy in rheumatoid arthritis. *New England Journal of Medicine*, *367*(6), 495–507. https://doi.org/10.1056/NEJMoa1109071

Keystone, E. C., Taylor, P. C., Drescher, E., Schlichting, D. E., Beattie, S. D., Berclaz, P.-Y., Lee, C. H., Fidelus-Gort, R. K., Luchi, M. E., Rooney, T. P., Macias, W. L., & Genovese, M. C. (2015). Safety and efficacy of baricitinib at 24 weeks in patients with rheumatoid arthritis who have had an inadequate response to methotrexate. *Annals of the Rheumatic Diseases*, *74*(2), 333–340. https://doi.org/10.1136/annrheumdis-2014-206478

Mathern, D. R., & Heeger, P. S. (2015). Molecules Great and Small: The Complement System. *Clinical Journal of the American Society of Nephrology : CJASN*, *10*(9), 1636–1650. https://doi.org/10.2215/CJN.06230614

Rother, R. P., Rollins, S. A., Mojcik, C. F., Brodsky, R. A., & Bell, L. (2007). Discovery and development of the complement inhibitor eculizumab for the treatment of paroxysmal nocturnal hemoglobinuria. *Nature Biotechnology*, *25*(11), 1256–1264. https://doi.org/10.1038/nbt1344

Prasanna Kumar, K. M., Ghosh, S., Canovatchel, W., Garodia, N., & Rajashekar, S. (2017). A review of clinical efficacy and safety of canagliflozin 300 mg in the management of patients with type 2 diabetes mellitus. *Indian Journal of Endocrinology and Metabolism*, *21*(1), 196–209. https://doi.org/10.4103/2230-8210.196016

Berger, S. P., & Daha, M. R. (2007). Complement in glomerular injury. *Seminars in Immunopathology*, *29*(4), 375–384. https://doi.org/10.1007/s00281-007-0090-3

Flyvbjerg, A. (2017). The role of the complement system in diabetic nephropathy. *Nature Reviews. Nephrology*, *13*(5), 311–318. https://doi.org/10.1038/nrneph.2017.31

Legendre, C. M., Licht, C., Muus, P., Greenbaum, L. A., Babu, S., Bedrosian C Bingham, C., Cohen, D. J., Delmas, Y., Douglas, K., Eitner, F., Feldkamp, T., Fouque, D., Furman, R. R., Gaber, O., Herthelius, M., Hourmant, M., Karpman, D., Lebranchu, Y., Mariat, C., … Loirat, C. (2013). Terminal complement inhibitor eculizumab in atypical hemolytic-uremic syndrome. *New England Journal of Medicine*, *368*(23), 2169–2181. https://doi.org/10.1056/NEJMoa1208981

Guan, L.-Z., Tong, Q., & Xu, J. (2015). Elevated serum levels of mannose-binding lectin and diabetic nephropathy in type 2 diabetes. *PloS One*, *10*(3), e0119699. https://doi.org/10.1371/journal.pone.0119699

Breyer, M. D., & Susztak, K. (2016). Developing Treatments for Chronic Kidney Disease in the 21st Century. *Seminars in Nephrology*, *36*(6), 436–447. https://doi.org/10.1016/j.semnephrol.2016.08.001

Events, C., Patients, I. N., Chronic, W., & Disease, K. (2017). Death , Esrd and Cardiovascular Events in Patients. *J Hypertens*, *34*(2), 244–252. https://doi.org/10.1097/HJH.0000000000000779.VISIT-TO-VISIT

Morton, D. L., Thompson, J. F., Cochran, A. J., Mozzillo, N., Nieweg, O. E., Roses, D. F., Hoekstra, H. J., Karakousis, C. P., Puleo, C. A., Coventry, B. J., Smithers, B. M., Paul, E., Kraybill, W. G., Mckinnon, J. G., Elashoff, R., Faries, M. B., Zealand, N., & Trials, M. (2014). *New England Journal*. 599–609. https://doi.org/10.1056/NEJMoa1310460

Xie, X., Liu, Y., Perkovic, V., Li, X., Ninomiya, T., Hou, W., Zhao, N., Liu, L., Lv, J., Zhang, H., & Wang, H. (2016). Renin-Angiotensin System Inhibitors and Kidney and Cardiovascular Outcomes in Patients with CKD: A Bayesian Network Meta-analysis of Randomized Clinical Trials. *American Journal of Kidney Diseases*, *67*(5), 728–741. https://doi.org/10.1053/j.ajkd.2015.10.011

Hu, M. C., Kuro-O, M., & Moe, O. W. (2013). Klotho and chronic kidney disease. *Contributions to Nephrology*, *180*, 47–63. https://doi.org/10.1159/000346778

Goldsmith, D. J. A., Covic, A., Fouque, D., Locatelli, F., Olgaard, K., Rodriguez, M., Spasovski, G., Urena, P., Zoccali, C., London, G. M., & Vanholder, R. (2010). Endorsement of the Kidney Disease Improving Global Outcomes (KDIGO) Chronic Kidney Disease-Mineral and Bone Disorder (CKD-MBD) Guidelines: a European Renal Best Practice (ERBP) commentary statement. *Nephrology, Dialysis, Transplantation : Official Publication of the European Dialysis and Transplant Association - European Renal Association*, *25*(12), 3823–3831. https://doi.org/10.1093/ndt/gfq513

Ketteler, M., Elder, G. J., Evenepoel, P., Ix, J. H., Jamal, S. A., Lafage-Proust, M.-H., Shroff, R., Thadhani, R. I., Tonelli, M. A., Kasiske, B. L., Wheeler, D. C., & Leonard, M. B. (2015). Revisiting KDIGO clinical practice guideline on chronic kidney disease-mineral and bone disorder: a commentary from a Kidney Disease: Improving Global Outcomes controversies conference. In *Kidney international* (Vol. 87, Issue 3, pp. 502–528). https://doi.org/10.1038/ki.2014.425

Panwar, B., & Gutiérrez, O. M. (2016). Disorders of Iron Metabolism and Anemia in Chronic Kidney Disease. *Seminars in Nephrology*, *36*(4), 252–261. https://doi.org/10.1016/j.semnephrol.2016.05.002

Novak, M., Winkelman, J. W., & Unruh, M. (2015). Restless Legs Syndrome in Patients With Chronic Kidney Disease. *Seminars in Nephrology*, *35*(4), 347–358. https://doi.org/10.1016/j.semnephrol.2015.06.006

Vyas, S., Chesarone-Cataldo, M., Todorova, T., Huang, Y.-H., & Chang, P. (2013). A systematic analysis of the PARP protein family identifies new functions critical for cell physiology. *Nature Communications*, *4*(1), 2240. https://doi.org/10.1038/ncomms3240

O'Shea, J. J., & Plenge, R. (2012). JAK and STAT signaling molecules in immunoregulation and immune-mediated disease. *Immunity*, *36*(4), 542–550. https://doi.org/10.1016/j.immuni.2012.03.014

Structural and chemical aspects of resistance to the antibiotic, fosfomycin, conferred by F. from B. cereus. (2011). 基因的改变NIH Public Access. *Bone*, *23*(1), 1–7. https://doi.org/10.1161/CIRCULATIONAHA.110.956839

O'Shea, J. J., & Plenge, R. (2013). JAKs and STATs in Immunoregulation and Immune-Mediated Disease. *Immunity*, *36*(4), 542–550. https://doi.org/10.1016/j.immuni.2012.03.014.JAKs

Benz, K., Hilgers, K. F., Daniel, C., & Amann, K. (2018). Vascular Calcification in Chronic Kidney Disease: The Role of Inflammation. *International Journal of Nephrology*, *2018*. https://doi.org/10.1155/2018/4310379

Baigent, C., Landray, M. J., Reith, C., Emberson, J., Wheeler, D. C., Tomson, C., Wanner, C., Krane, V., Cass, A., Craig, J., Neal, B., Jiang, L., Hooi, L. S., Levin, A., Agodoa, L., Gaziano, M., Kasiske, B., Walker, R., Massy, Z. A., … Investigators, S. (2011). The effects of lowering LDL cholesterol with simvastatin plus ezetimibe in patients with chronic kidney disease (Study of Heart and Renal Protection): a randomised placebo-controlled trial. *Lancet (London, England)*, *377*(9784), 2181–2192. https://doi.org/10.1016/S0140-6736(11)60739-3

Fox, C. S., Matsushita, K., Woodward, M., Bilo, H. J. G., Chalmers, J., Lambers Heerspink, H. J., Lee, B. J., Perkins, R. M., Rossing, P., Sairenchi, T., Tonelli, M., Vassalotti, J. A., Yamagishi, K., Coresh, J., De Jong, P. E., Wen, C. P., & Nelson, R. G. (2012). Associations of kidney disease measures with mortality and end-stage renal disease in individuals with and without diabetes: A meta-analysis. *The Lancet*, *380*(9854), 1662–1673. https://doi.org/10.1016/S0140-6736(12)61350-6

Go, A. S., Chertow, G. M., Fan, D., McCulloch, C. E., & Hsu, C. Y. (2004). Chronic kidney disease and the risks of death, cardiovascular events, and hospitalization. *New England Journal of Medicine*, *351*(13), 1296–1305. https://doi.org/10.1056/NEJMoa041031

Hommos, M. S., Zeng, C., Liu, Z., Troost, J., Rosenberg, A., Palmer, M., Kremers, W. K., Cornell, L. D., Fervenza, F. C., Barisoni, L., Rule, A. D., Clinic, M., Hospital, J., Diseases, C., Mott, C. S., Arbor, A., & Clinic, M. (2019). *HHS Public Access*. *93*(5), 1175–1182. https://doi.org/10.1016/j.kint.2017.09.028.Global

Fogo, A. B. (2015). Causes and pathogenesis of focal segmental glomerulosclerosis. *Nature Reviews Nephrology*, *11*(2), 76–87. https://doi.org/10.1038/nrneph.2014.216

Matlow, A. G., & Berte, L. M. (2004). Sources of Error in Laboratory Medicine. *Laboratory Medicine*, *35*(6), 331–334. https://doi.org/10.1309/jq84jpu4x41qefel

Gava, A. L., Freitas, F. P. S., Balarini, C. M., Vasquez, E. C., & Meyrelles, S. S. (2012). Effects of 5/6 nephrectomy on renal function and blood pressure in mice. *International Journal of Physiology, Pathophysiology and Pharmacology*, *4*(3), 167–173.

Ohashi, K., Iwatani, H., Kihara, S., Nakagawa, Y., Komura, N., Fujita, K., Maeda, N., Nishida, M., Katsube, F., Shimomura, I., Ito, T., & Funahashi, T. (2007).

Exacerbation of albuminuria and renal fibrosis in subtotal renal ablation model of adiponectin-knockout mice. *Arteriosclerosis, Thrombosis, and Vascular Biology*, *27*(9), 1910–1917. https://doi.org/10.1161/ATVBAHA.107.147645

Di Micco, L., Quinn, R. R., Ronksley, P. E., Bellizzi, V., Lewin, A. M., Cianciaruso, B., & Ravani, P. (2013). Urine creatinine excretion and clinical outcomes in CKD. *Clinical Journal of the American Society of Nephrology : CJASN*, *8*(11), 1877–1883. https://doi.org/10.2215/CJN.01350213

Trevisan, A., Chiara, F., Mongillo, M., Quintieri, L., & Cristofori, P. (2012). Sex-related differences in renal toxicodynamics in rodents. *Expert Opinion on Drug Metabolism & Toxicology*, *8*, 1173–1188. https://doi.org/10.1517/17425255.2012.698262

Delanaye, P., Cavalier, E., & Pottel, H. (2017). Serum Creatinine: Not so Simple! *Nephron*, *136*(4), 302–308. https://doi.org/10.1159/000469669

de Castro, B. B. A. bre., Colugnati, F. A. ntoni. B., Cenedeze, M. A. ntoni., Suassuna, P. G. iovann. de A., & Pinheiro, H. S. (2014). Standardization of renal function evaluation in Wistar rats (Rattus norvegicus) from the Federal University of Juiz de Fora's colony. *Jornal Brasileiro de Nefrologia : 'orgão Oficial de Sociedades Brasileira e Latino-Americana de Nefrologia*, *36*(2), 139–149. https://doi.org/10.5935/0101-2800.20140023

Bindroo S, Quintanilla Rodriguez BS, Challa HJ. Renal Failure. [Updated 2020 Aug 13]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK519012/

Topaloğlu, R. (2005). Progression to renal failure. *The Turkish Journal of Pediatrics*, *47 Suppl*, 3–8.

Chertow, G. M., Burdick, E., Honour, M., Bonventre, J. V, & Bates, D. W. (2005). Acute kidney injury, mortality, length of stay, and costs in hospitalized patients. *Journal of the American Society of Nephrology : JASN*, *16*(11), 3365–3370. https://doi.org/10.1681/ASN.2004090740