CHAPTER 8

BIBLIOGRAPHY

1. Abbott, C. A., Malik, R. A., van Ross, E. R., Kulkarni, J., & Boulton, A. J. (2011). Prevalence and characteristics of painful diabetic neuropathy in a large community-based diabetic population in the UK. *Diabetes care*, 34(10), **2220-2224**.
2. Adler, A. I., Stevens, R. J., Manley, S. E., Bilous, R. W., Cull, C. A., Holman, R. R., & UKPDS Group. (2003). Development and progression of nephropathy in type 2 diabetes: the United Kingdom Prospective Diabetes Study (UKPDS 64). *Kidney international*, 63(1), **225-232**.
3. Adler, A. I., Stratton, I. M., Neil, H. A. W., Yudkin, J. S., Matthews, D. R., Cull, C. A., & Holman, R. R. (2000). Association of systolic blood pressure with macrovascular and microvascular complications of type 2 diabetes (UKPDS 36): prospective observational study. *Bmj*, 321(7258), **412-419**.

4. Afkarian, M., Sachs, M. C., Kestenbaum, B., Hirsch, I. B., Tuttle, K. R., Himmelfarb, J., & De Boer, I. H. (2013). Kidney disease and increased mortality risk in type 2 diabetes. *Journal of the American Society of Nephrology*, 24(2), **302-308**.
5. Agostini, L., Martinon, F., Burns, K., McDermott, M. F., Hawkins, P. N., & Tschopp, J. (2004). NALP3 forms an IL-1β-processing inflammasome with increased activity in Muckle-Wells autoinflammatory disorder. *Immunity*, 20(3), **319-325**.
6. Agrawal, N. K., & Kant, S. (2014). Targeting inflammation in diabetes: Newer therapeutic options. *World J Diabetes*, 5(5), **697-710**.
7. Ahlqvist, E., Ahluwalia, T. S., & Groop, L. (2011). Genetics of type 2 diabetes. *Clinical chemistry*, 57(2), **241-254**.
8. Ajibade, A. A., Wang, H. Y., & Wang, R. F. (2013). Cell type-specific function of TAK1 in innate immune signaling. *Trends in immunology*, 34(7), **307-316**.
9. Akbari, M., & Hassan-Zadeh, V. (2018). IL-6 signalling pathways and the development of type 2 diabetes. I*nflammopharmacology*, 26(3), **685-698**.
10. Akira, S. (2006). TLR signaling. In *From Innate Immunity to Immunological Memory* (pp. 1-16). Springer, Berlin, Heidelberg.
11. Akira, S., Uematsu, S., & Takeuchi, O. (2006). Pathogen recognition and innate immunity. *Cell*, 124(4), **783-801**.
12. Alicic, R. Z., Rooney, M. T., & Tuttle, K. R. (2017). Diabetic kidney disease: challenges, progress, and possibilities. *Clinical Journal of the American Society of Nephrology*, 12(12), **2032-2045**.
13. Alicic, R. Z., Rooney, M. T., & Tuttle, K. R. (2017). Diabetic kidney disease: challenges, progress, and possibilities. *Clinical Journal of the American Society of Nephrology*, 12(12), **2032-2045**.
14. Allam, R., Darisipudi, M. N., Tschopp, J., & Anders, H. J. (2013). Histones trigger sterile inflammation by activating the NLRP 3 inflammasome. *European journal of immunology*, 43(12**), 3336-3342**.
15. Allcock, G. H., Allegra, M., Flower, R. J., & Perretti, M. (2001). Neutrophil accumulation induced by bacterial lipopolysaccharide: effects of dexamethasone and annexin 1. *Clinical & Experimental Immunology*, 123(1), **62-67**.

16. Allen, I. C., Scull, M. A., Moore, C. B., Holl, E. K., McElvania-TeKippe, E., Taxman, D. J., *et al*. (2009). The NLRP3 inflammasome mediates in vivo innate immunity to influenza A virus through recognition of viral RNA. *Immunity*, *30*(4), 556-565.
17. Allin, K. H., Nielsen, T., & Pedersen, O. (2015). Mechanisms in endocrinology: gut microbiota in patients with type 2 diabetes mellitus. *European journal of endocrinology*, 172(4), R167-R177.
18. Allin, K. H., Nielsen, T., & Pedersen, O. (2015). Mechanisms in endocrinology: gut microbiota in patients with type 2 diabetes mellitus. *European journal of endocrinology*, 172(4), **R167-R177**.
19. Almdal, T., Scharling, H., Jensen, J. S., & Vestergaard, H. (2004). The independent effect of type 2 diabetes mellitus on ischemic heart disease, stroke, and death: a population-based study of 13 000 men and women with 20 years of follow-up. *Archives of internal medicine*, 164(13), **1422-1426**.
20. Amar, J., Chabo, C., Waget, A., Klopp, P., Vachoux, C., Bermúdez-Humarán, L. G., *et al*. (2011). Intestinal mucosal adherence and translocation of commensal bacteria at the early onset of type 2 diabetes: molecular mechanisms and probiotic treatment. *EMBO molecular medicine*, 3(9), **559-572**.
21. American Diabetes Association. (2013). Diagnosis and classification of diabetes mellitus. *Diabetes care*, 36(Supplement 1), **S67-S74.**
22. American Diabetes Association. (2017).2. Classification and diagnosis of diabetes. *Diabetes care*, 40(Supplement 1), **S11-S24.**
23. American Diabetes Association. (2018). 8. Pharmacologic approaches to glycemic treatment: Standards of Medical Care in Diabetes-2018. *Diabetes care*, *41*(Suppl 1), **S73**.
24. American Diabetes Association. (2018).2. Classification and diagnosis of diabetes: standards of medical care in diabetes—2018. *Diabetes care*, 41(Supplement 1), S13-S27.
25. An, Y., Xu, F., Le, W., Ge, Y., Zhou, M., Chen, H., & Liu, Z. (2014). Renal histologic changes and the outcome in patients with diabetic nephropathy. *Nephrology Dialysis Transplantation*, 30(2), **257-266**.
26. Anders, H. J. (2016). Of inflammasomes and alarmins: IL-1β and IL-1α in kidney disease. *Journal of the American Society of Nephrology*, 27(9), **2564-2575**.

27. Anders, H.J., & Muruve, D. A. (2011). The inflammasomes in kidney disease. *Journal of the American Society of Nephrology,* 22(6), **1007-1018**.
28. Anders, H.J., & Schaefer, L. (2014). Beyond tissue injury—damage-associated molecular patterns, Toll-like receptors, and inflammasomes also drive regeneration and fibrosis. *Journal of the American Society of Nephrology*, 25(7), **1387-1400**.
29. Anjana, R. M., Deepa, M., Pradeepa, R., Mahanta, J., Narain, K., Das, H. K., & Bhansali, A. (2017). Prevalence of diabetes and prediabetes in 15 states of India: results from the ICMR–INDIAB population-based cross-sectional study. *The lancet Diabetes & endocrinology*, 5(8), **585-596**.
30. Arostegui, J. I., Lopez Saldana, M. D., Pascal, M., Clemente, D., Aymerich, M., Balaguer, F., *et al*. (2010). A somatic NLRP3 mutation as a cause of a sporadic case of chronic infantile neurologic, cutaneous, articular syndrome/neonatal-onset multisystem inflammatory disease: Novel evidence of the role of low-level mosaicism as the pathophysiologic mechanism underlying mendelian inherited diseases. *Arthritis & Rheumatism*, 62(4), **1158-1166**.
31. Arroyo, J. D., Chevillet, J. R., Kroh, E. M., Ruf, I. K., Pritchard, C. C., Gibson, D. F., *et al*. (2011). Argonaute2 complexes carry a population of circulating microRNAs independent of vesicles in human plasma. *Proceedings of the National Academy of Sciences*, 108(12), **5003-5008**.
32. Arumugam, M., Raes, J., Pelletier, E., Le Paslier, D., Yamada, T., Mende, D. R., *et al.* (2011). Erratum: Enterotypes of the human gut microbiome (Nature (2011) 473 (174-180)). *Nature*, 474(7353).
33. Asemi, Z., Jazayeri, S., Najafi, M., Samimi, M., Mofid, V., Shidfar, F., *et al.* (2011). Effects of daily consumption of probiotic yoghurt on inflammatory factors in pregnant women: a randomized controlled trial. *Pakistan Journal of Biological Sciences*, 14(8), **476**.
34. Asemi, Z., Samimi, M., Tabassi, Z., Rad, M. N., Foroushani, A. R., Khorammian, H., & Esmaillzadeh, A. (2013). Effect of daily consumption of probiotic yoghurt on insulin resistance in pregnant women: a randomized controlled trial. *European journal of clinical nutrition*, 67(1), **71**.

Available from: https://www.rndsystems.com/resources/articles/toll-receptor-family

35. Azad, M. B., Konya, T., Maughan, H., Guttman, D. S., Field, C. J., Sears, M. R., *et al.* 2013). Infant gut microbiota and the hygiene hypothesis of allergic disease: impact of household pets and siblings on microbiota composition and diversity. *Allergy, Asthma & Clinical Immunology*, 9(1), **15**.
36. Babelova, A., Moreth, K., Tsalastra-Greul, W., Zeng-Brouwers, J., Eickelberg, O., Young, M. F., *et al.* (2009). Biglycan, a danger signal that activates the NLRP3 inflammasome via toll-like and P2X receptors. *Journal of Biological Chemistry*, 284(36), **24035-24048**.
37. Backhed, F., Ley, R. E., Sonnenburg, J. L., Peterson, D. A., & Gordon, J. I. (2005). Host-bacterial mutualism in the human intestine. *science*, 307(5717), **1915-1920**.
38. Baena-Diez, J. M., Penafiel, J., Subirana, I., Ramos, R., Elosua, R., Marín-Ibañez, A., & Cabre, J. J. (2016). Risk of cause-specific death in individuals with diabetes: a competing risks analysis. *Diabetes Care*, 39(11), **1987-1995**.
39. Baroja-Mazo, A., Martin-Sanchez, F., Gomez, A. I., Martinez, C. M., Amores-Iniesta, J., Compan, V., *et al*. (2014). The NLRP3 inflammasome is released as a particulate danger signal that amplifies the inflammatory response. *Nature immunology*, 15(8), **738**.
40. Barrios, C., Beaumont, M., Pallister, T., Villar, J., Goodrich, J. K., Clark, A., *et al.* (2015). Gut-microbiota-metabolite axis in early renal function decline. *PloS one*, *10*(8), **e0134311.**
41. Bartel, D. P. (2004). MicroRNAs: genomics, biogenesis, mechanism, and function. *cell*, 116(2), **281-297**.
42. Barton, G. M., & Kagan, J. C. (2009). A cell biological view of Toll-like receptor function: regulation through compartmentalization. *Nature Reviews Immunology*, 9(8), **535**.
43. Bash, L. D., Selvin, E., Steffes, M., Coresh, J., & Astor, B. C. (2008). Poor glycemic control in diabetes and the risk of incident chronic kidney disease even in the absence of albuminuria and retinopathy: Atherosclerosis Risk in Communities (ARIC) Study. *Archives of internal medicine*, 168(22), **2440-2447**.
44. Bauernfeind, F., Rieger, A., Schildberg, F. A., Knolle, P. A., Schmid-Burgk, J. L., & Hornung, V. (2012). NLRP3 inflammasome activity is negatively controlled by miR-223. *The Journal of Immunology*, 189(8), **4175-4181**.

45. Baynest, H.W. (2015). Classification, Pathophysiology, Diagnosis and Management of Diabetes Mellitus. DOI:10.4172/2155-6156.1000541
46. Beg, M. S., Hong, D. S., Sachdev, J. C., Brenner, A. J., Borad, M. J., Lim, H. Y., *et al.* (2016). First-in-human trial of microRNA cancer therapy with MRX34, a liposomal miR-34 mimic: Phase Ia expansion in patients with advanced solid tumors. **NCT01829971**
47. Behl, T., Kaur, I., Goel, H., & Pandey, R. K. (2014). Diabetic nephropathy and diabetic retinopathy as major health burdens in modern era. *World Journal of Pharmacy and Pharmaceutical Sciences, 3*(7), **370-387.**
48. Behm-Ansmant, I., Rehwinkel, J., & Izaurralde, E. (2006, January). MicroRNAs silence gene expression by repressing protein expression and/or by promoting mRNA decay. In *Cold Spring Harbor symposia on quantitative biology* (Vol. 71, pp. 523-530). Cold Spring Harbor Laboratory Press.
49. Bell, J. K., Mullen, G. E., Leifer, C. A., Mazzoni, A., Davies, D. R., & Segal, D. M. (2003). Leucine-rich repeats and pathogen recognition in Toll-like receptors. *Trends in immunology*, 24(10), **528-533**.
50. Bentwich, I., Avniel, A., Karov, Y., Aharonov, R., Gilad, S., Barad, O., *et al.* (2005). Identification of hundreds of conserved and nonconserved human microRNAs. *Nature genetics*, 37(7), **766**.
51. Berezikov, E. (2011). Evolution of microRNA diversity and regulation in animals. *Nature Reviews Genetics*, 12(12), **846**.
52. Berezikov, E., van Tetering, G., Verheul, M., van de Belt, J., van Laake, L., Vos, J., *et al.* (2006). Many novel mammalian microRNA candidates identified by extensive cloning and RAKE analysis. *Genome research*, 16(10), **1289-1298**.
53. Bergsbaken, T., Fink, S. L., & Cookson, B. T. (2009). Pyroptosis: host cell death and inflammation. *Nature Reviews Microbiology*, 7(2), **99**.
54. Bertoli, G., Cava, C., & Castiglioni, I. (2015). MicroRNAs: new biomarkers for diagnosis, prognosis, therapy prediction and therapeutic tools for breast cancer. *Theranostics*, 5(10), **1122**.
55. Bhattacharjee, C. K., Paine, S. K., Mahanta, J., Borphukan, S., & Borah, P. K. (2019). Expression of inflammasome complex mRNA and its targeted microRNA in type 2

diabetes mellitus: A possible predictor of the severity of diabetic nephropathy. *Journal of diabetes*, 11(1), **90-92**.

56. Billy, E., Brondani, V., Zhang, H., Müller, U., & Filipowicz, W. (2001). Specific interference with gene expression induced by long, double-stranded RNA in mouse embryonal teratocarcinoma cell lines. *Proceedings of the National Academy of Sciences*, 98(25), **14428-14433**.
57. Blankenberg, S., Tiret, L., Bickel, C., Peetz, D., Cambien, F., Meyer, J., & Rupprecht, H. J. (2002). Interleukin-18 is a strong predictor of cardiovascular death in stable and unstable angina. *Circulation*, 106(1), **24-30**.
58. Blasius, A. L., & Beutler, B. (2010). Intracellular toll-like receptors. *Immunity*, 32(3), **305-315**.
59. Blumberg, R., & Powrie, F. (2012). Microbiota, disease, and back to health: a metastable journey. *Science translational medicine*, 4(137), **137rv7-137rv7**.
60. Bodnar, R. J., Pasternak, G. W., Mann, P. E., Paul, D., Warren, R., & Donner, D. B. (1989). Mediation of anorexia by human recombinant tumor necrosis factor through a peripheral action in the rat. *Cancer Research*, 49(22), **6280-6284**.
61. Bohnsack, M. T., Czaplinski, K., & Gorlich, D. (2004). Exportin 5 is a RanGTP-dependent dsRNA-binding protein that mediates nuclear export of pre-miRNAs. *Rna*, 10(2), **185-191.**
62. Bonventre, J. V. (2012, September). Can we target tubular damage to prevent renal function decline in diabetes? In *Seminars in nephrology* (Vol. 32, No. 5, pp. 452-462). WB Saunders.
63. Borchert, G. M., Lanier, W., & Davidson, B. L. (2006). RNA polymerase III transcribes human microRNAs. *Nature structural & molecular biology*, 13(12), **1097**.
64. Borg, R., Kuenen, J. C., Carstensen, B., Zheng, H., Nathan, D. M., Heine, R. J., & ADAG Study Group. (2010). Real-life glycaemic profiles in non-diabetic individuals with low fasting glucose and normal HbA1C: the A1C-Derived Average Glucose (ADAG) study. *Diabetologia*, *53*(8), **1608-1611**.
65. Botos, I., Segal, D. M., & Davies, D. R. (2011). The structural biology of Toll-like receptors. *Structure*, 19(4), **447-459**.

66. Boudina, S., & Abel, E. D. (2007). Diabetic cardiomyopathy revisited. *Circulation*, 115(25), **3213-3223**.
67. Boyd, S. D. (2008). Everything you wanted to know about small RNA but were afraid to ask. *Laboratory investigation*, 88(6), **569**.
68. Bracht, J., Hunter, S., Eachus, R., Weeks, P., & Pasquinelli, A. E. (2004). Trans-splicing and polyadenylation of let-7 microRNA primary transcripts. *Rna*, 10(10), **1586-1594**.
69. Brito, P. L., Fioretto, P., Drummond, K., Kim, Y., Steffes, M. W., Basgen, J. M., & Mauer, M. (1998). Proximal tubular basement membrane width in insulin-dependent diabetes mellitus. *Kidney international*, *53*(3), **754-761**.
70. Brogard, J. M., Vetter, T., & Blickle, J. F. (1992). Discovery of pancreatic diabetes in Strasbourg. *Diabete & metabolisme*, 18(2), 104-114.
71. Brown, A. J., Goldsworthy, S. M., Barnes, A. A., Eilert, M. M., Tcheang, L., Daniels, D., *et al*. (2003). The Orphan G protein-coupled receptors GPR41 and GPR43 are activated by propionate and other short chain carboxylic acids. *Journal of Biological Chemistry*, 278(13), **11312-11319**.
72. Brownlee, M. (2001). Biochemistry and molecular cell biology of diabetic complications. *Nature*, 414(6865), **813**.
73. Brownlee, M. (2005). The pathobiology of diabetic complications: a unifying mechanism. *Diabetes*, 54(6), **1615-1625.**
74. Broz, P., von Moltke, J., Jones, J. W., Vance, R. E., & Monack, D. M. (2010). Differential requirement for Caspase-1 autoproteolysis in pathogen-induced cell death and cytokine processing. *Cell host & microbe*, 8(6), **471-483**.
75. Bushati, N., & Cohen, S. M. (2007). microRNA functions. *Annu. Rev. Cell Dev. Biol.*, 23, **175-205**.
76. Cani, P. D. (2018). Human gut microbiome: hopes, threats and promises. *Gut*, 67(9), **1716-1725.**
77. Cani, P. D., Amar, J., Iglesias, M. A., Poggi, M., Knauf, C., Bastelica, D., *et al.* (2007). Metabolic endotoxemia initiates obesity and insulin resistance. *Diabetes*, 56(7), **1761-1772**.
78. Cani, P. D., Rottier, O., Guiot, Y., Neyrinck, A. M., Geurts, L., & Delzenne, N. M. (2008). Changes in gut microbiota control intestinal permeability-induced inflammation in

obese and diabetic mice through unexpected dependent mechanisms. *Diabetologia: clinical and experimental diabetes and metabolism*, 51, **S34**.

79. Cano, P. G., Santacruz, A., Trejo, F. M., & Sanz, Y. (2013). Bifidobacterium CECT 7765 improves metabolic and immunological alterations associated with obesity in high-fat diet-fed mice. *Obesity*, 21(11), **2310-2321**.
80. Cantarini, L., Lucherini, O. M., Frediani, B., Brizi, M. G., Bartolomei, B., Cimaz, R., Rigante, D. (2011). Bridging the Gap between the Clinician and the Patient with Cryopyrin-Associated Periodic Syndromes. *International Journal of Immunopathology and Pharmacology*, **827–836**.
81. Caporaso, J. G., Kuczynski, J., Stombaugh, J., Bittinger, K., Bushman, F. D., Costello, E. K., *et al.* (2010). QIIME allows analysis of high-throughput community sequencing data. *Nature methods*, 7(5), **335**.
82. Caramori, M. L., Fioretto, P., & Mauer, M. (2000). The need for early predictors of diabetic nephropathy risk: is albumin excretion rate sufficient? *Diabetes*, 49(9), **1399-1408**.
83. Caramori, M. L., Fioretto, P., & Mauer, M. (2003). Low glomerular filtration rate in normoalbuminuric type 1 diabetic patients: an indicator of more advanced glomerular lesions. *Diabetes*, 52(4), **1036-1040**.
84. Care, D. (2004). Position statements & ADA statements. *Diabetes Care*, 27(1), S106-S109.
85. Carthew, R. W. (2006). Gene regulation by microRNAs. *Current opinion in genetics & development*, 16(2), **203-208**.
86. Carthew, R. W., & Sontheimer, E. J. (2009). Origins and mechanisms of miRNAs and siRNAs. *Cell*, 136(4), **642-655**.
87. Cavaghan, M. K., Ehrmann, D. A., & Polonsky, K. S. (2000). Interactions between insulin resistance and insulin secretion in the development of glucose intolerance. *The Journal of clinical investigation*, 106(3), **329-333**.
88. Cederberg, H., Saukkonen, T., Laakso, M., Jokelainen, J., Härkönen, P., Timonen, M., .& Rajala, U. (2010). Postchallenge glucose, A1C, and fasting glucose as predictors of type 2 diabetes and cardiovascular disease: a 10-year prospective cohort study. *Diabetes care*, 33(9), **2077-2083**.

89. Chakraborty, C., Sharma, A. R., Sharma, G., Doss, C. G. P., & Lee, S. S. (2017). Therapeutic miRNA and siRNA: moving from bench to clinic as next generation medicine. *Molecular Therapy-Nucleic Acids*, 8, **132-143**.

90. Chan, J. C., Wat, N. M., So, W. Y., Lam, K. S., Chua, C. T., Wong, K. S. & Cooper, M. E. (2004). Renin angiotensin aldosterone system blockade and renal disease in patients with type 2 diabetes: an Asian perspective from the RENAAL study. *Diabetes Care*, 27(4), **874-879**.

91. Chang, W., Lin, J., Dong, J., & Li, D. (2013). Pyroptosis: an inflammatory cell death implicates in atherosclerosis. *Medical hypotheses*, 81(3), **484-486**.

92. Chassaing, B., Ley, R. E., & Gewirtz, A. T. (2014). Intestinal epithelial cell toll-like receptor 5 regulates the intestinal microbiota to prevent low-grade inflammation and metabolic syndrome in mice. *Gastroenterology*, 147(6), **1363-1377**.

93. Chen, H.-Y., Zhong, X., Huang, X. R., Meng, X.-M., You, Y., Chung, A. C. (2014). MicroRNA-29b inhibits diabetic nephropathy in db/db mice. *Molecular Therapy*, 22(4), **842-853**.

94. Chen, X., Ba, Y., Ma, L., Cai, X., Yin, Y., Wang, K., *et al*. (2008). Characterization of microRNAs in serum: a novel class of biomarkers for diagnosis of cancer and other diseases. *Cell research*, 18(10), **997-1006**.

95. Chen, X., D'Souza, R., & Hong, S. T. (2013). The role of gut microbiota in the gut-brain axis: current challenges and perspectives. *Protein & cell*, 4(6), **403-414**.

96. Chen, Z. J. (2012). Ubiquitination in signaling to and activation of IKK. *Immunological reviews*, 246(1), **95-106**.

97. Chendrimada, T. P., Finn, K. J., Ji, X., Baillat, D., Gregory, R. I., Liebhaber, S. A., *et al.* (2007). MicroRNA silencing through RISC recruitment of eIF6. *Nature*, 447(7146), **823-828**.

98. Chistoserdova, L. (2009). Functional metagenomics: recent advances and future challenges. *Biotechnology and Genetic Engineering Reviews*, 26(1), **335-352**.

99. Cho N., Shaw J. E., Karuranga S., Huang Y., da Rocha Fernandes J. D., Ohlrogge A. W., & Malanda B. (2018). IDF Diabetes Atlas: Global estimates of diabetes prevalence for 2017 and projections for 2045. *Diabetes research and clinical practice*, 138**, 271-281.**

100. Christmas, P. (2010). Toll-like receptors: sensors that detect infection. *Nature Education*, 3(9), **85**.

101. Chuang, T. H., & Ulevitch, R. J. (2001). Identification of hTLR10: a novel human Toll-like receptor preferentially expressed in immune cells. *Biochimica et Biophysica Acta (BBA)-Gene Structure and Expression*, 1518(1-2), **157-161**.

102. Clemente, J. C., Ursell, L. K., Parfrey, L. W., & Knight, R. (2012). The impact of the gut microbiota on human health: an integrative view. *Cell*, 148(6), **1258-1270**.

103. Cockcroft, D. W., & Gault, M. H. (1976). Prediction of Creatinine Clearance from Serum Creatinine. *Nephron*, 16, **31-41**.

104. Cogswell, J. P., Ward, J., Taylor, I. A., Waters, M., Shi, Y., Cannon, B., *et al*. (2008). Identification of miRNA changes in Alzheimer's disease brain and CSF yields putative biomarkers and insights into disease pathways. *Journal of Alzheimer's disease*, 14(1), **27-41**.

105. Collins, L. J., Schonfeld, B., & Chen, X. S. (2011). The epigenetics of non-coding RNA. In *Handbook of Epigenetics* (pp. 49-61). Academic Press.

106. Colpitts, S. L.,& Kasper, L. H. (2017). Influence of the gut microbiome on autoimmunity in the central nervous system. *The Journal of Immunology*, 198(2), **596-604**.

107. Conserva, F., Pontrelli, P., Accetturo, M., & Gesualdo, L. (2013). The pathogenesis of diabetic nephropathy: focus on microRNAs and proteomics. *J nephrol*, 26(5), **811-820**.

108. Cooke, D. W., & Plotnick, L. (2008). Type 1 diabetes mellitus in pediatrics. *Pediatr Rev*, 29(11), **374-84**.

109. Cooke, D. W., & Plotnick, L. (2008). Type 1 diabetes mellitus in pediatrics. *Pediatr Rev*, 29(11), **374-84**.

110. Cullen, B. R. (2004). Transcription and processing of human microRNA precursors. *Molecular cell*, 16(6), **861-865.**

111. da Silveira, J. C., Veeramachaneni, D. R., Winger, Q. A., Carnevale, E. M., & Bouma, G. J. (2012). Cell-secreted vesicles in equine ovarian follicular fluid contain miRNAs and proteins: a possible new form of cell communication within the ovarian follicle. *Biology of reproduction*, 86(3), **71-81**.

112. Dabla P. K. (2010). Renal function in diabetic nephropathy. *World journal of diabetes*, 1(2), **48–56**.

113. Danelishvili, L., & Bermudez, L. E. (2013). Analysis of pyroptosis in bacterial infection. In Necrosis (pp. 67-73). Humana Press, Totowa, NJ.

114. Dasu, M. R., Devaraj, S., Park, S., & Jialal, I. (2010). Increased toll-like receptor (TLR) activation and TLR ligands in recently diagnosed type 2 diabetic subjects. *Diabetes care*, 33(4), **861-868**.

115. Dasu, M. R., Park, S., Devaraj, S., & Jialal, I. (2007). Pioglitazone inhibits Toll-like receptor expression and activity in human monocytes and db/db mice. *Endocrinology*, 150(8), **3457-3464**.

116. Deepak, S. A., Kottapalli, K. R., Rakwal, R., Oros, G., Rangappa, K. S., Iwahashi, H., *et al*. (2007). Real-time PCR: revolutionizing detection and expression analysis of genes. *Current genomics*, 8(4), **234-251**.

117. Demirel, I., Persson, A., Brauner, A., Sarndahl, E., Kruse, R., & Persson, K. (2018). Activation of the NLRP3 inflammasome pathway by uropathogenic Escherichia coli is virulence factor-dependent and influences colonization of bladder epithelial cells. *Frontiers in cellular and infection microbiology*, 8, **81**.

118. Demirel, I., Persson, A., Brauner, A., Särndahl, E., Kruse, R., & Persson, K. (2018). Activation of the NLRP3 inflammasome pathway by uropathogenic Escherichia coli is virulence factor-dependent and influences colonization of bladder epithelial cells. *Frontiers in cellular and infection microbiology***,** 8, **81**.

119. Denby, L., & Baker, A. H. (2016). Targeting non-coding RNA for the therapy of renal disease. *Current opinion in pharmacology*, 27, **70-77**.

120. Denli, A. M., Tops, B. B., Plasterk, R. H., Ketting, R. F., & Hannon, G. J. (2004). Processing of primary microRNAs by the Microprocessor complex. *Nature*, 432(7014), **231**.

121. Denou, E., Lolmède, K., Garidou, L., Pomie, C., Chabo, C., Lau, T. C., *et al*. (2015). Defective NOD2 peptidoglycan sensing promotes diet-induced inflammation, dysbiosis, and insulin resistance. *EMBO molecular medicine*, 7(3), **259-274**.

122. Devaraj, S., Dasu, M. R., Park, S. H., & Jialal, I. (2009). Increased levels of ligands of Toll-like receptors 2 and 4 in type 1 diabetes. *Diabetologia*, 52(8), **1665-1668**.

123. Devaraj, S., Dasu, M. R., Rockwood, J., Winter, W., Griffen, S. C., & Jialal, I. (2008). Increased toll-like receptor (TLR) 2 and TLR4 expression in monocytes from patients

with type 1 diabetes: further evidence of a proinflammatory state. *The journal of clinical endocrinology & metabolism*, 93(2), **578-583**.

124. "Diabetes Blue Circle Symbol". International Diabetes Federation. 17 March 2006. Archived from the original on 5 August 2007.
125. Diabetes - A Major Risk Factor for Kidney Disease. National Kidney Foundation. Retrieved from http://www. https://www.kidney.org/news/kidneyCare/summer09/diabetes_ckd.
126. Diabetes Control and Complications Trial Research Group (DCCTRG). (1993). The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *New England journal of medicine*, 329(14), **977-986**.
127. Diabetes: Past treatments, new discoveries. Retrieved from
128. Diaz-Rizzolo, D. A., Kostov, B., Lopez-Siles, M., Serra, A., Colungo, C., González-de-Paz, L., *et al.* (2019). Healthy dietary pattern and their corresponding gut microbiota profile are linked to a lower risk of type 2 diabetes, independent of the presence of obesity. *Clinical Nutrition*.
129. Dixit, V. D. (2013). Nlrp3 inflammasome activation in type 2 diabetes: is it clinically relevant? *Diabetes*, 62(1), **22-24**.
130. Doitsh, G., Galloway, N. L., Geng, X., Yang, Z., Monroe, K. M., Zepeda, O., *et al*. (2014). Cell death by pyroptosis drives CD4 T-cell depletion in HIV-1 infection. *Nature*, 505(7484), **509-514**.
131. Domanski, M., Mitchell, G., Pfeffer, M., Neaton, J. D., Norman, J., Svendsen, K.,& MRFIT Research Group. (2002). Pulse pressure and cardiovascular disease–related mortality: follow-up study of the Multiple Risk Factor Intervention Trial (MRFIT). *Jama*, 287(20), **2677-2683.**
132. Donate Correa, J., Martin-Nunez, E., Muros-de-Fuentes, M., Mora-Fernandez, C., & Navarro-Gonzalez, J. F. (2015). Inflammatory cytokines in diabetic nephropathy. *Journal of diabetes research*, 2015.
133. Dostert, C., Petrilli, V., Van Bruggen, R., Steele, C., Mossman, B. T., & Tschopp, J. (2008). Innate immune activation through Nalp3 inflammasome sensing of asbestos and silica. *Science*, 320(5876), **674-677**.

134. Drummond, K., & Mauer, M. (2002). The early natural history of nephropathy in type 1 diabetes: II. Early renal structural changes in type 1 diabetes. *Diabetes*, 51(5), **1580-1587**.
135. Dubey, A. K., Uppadhyaya, N., Nilawe, P., Chauhan, N., Kumar, S., Gupta, U. A., & Bhaduri, A. (2018). LogMPIE, pan-India profiling of the human gut microbiome using 16S rRNA sequencing. *Scientific data*, 5, **180232**.
136. Dunn, J. H., & Fujita, M. (2015). PYCARD (PYD and CARD domain containing). *Atlas of Genetics and Cytogenetics in Oncology and Haematology*.19(**4**).
137. Duran-Salgado, M. B., & Rubio-Guerra, A. F. (2014). Diabetic nephropathy and inflammation. *World journal of diabetes*, 5(3), **393**.
138. Edelstein, C. L. (Ed.). (2016). *Biomarkers of kidney disease*. Academic press.
139. Ejtahed, H. S., Mohtadi-Nia, J., Homayouni-Rad, A., Niafar, M., Asghari-Jafarabadi, M., & Mofid, V. (2012). Probiotic yogurt improves antioxidant status in type 2 diabetic patients. *Nutrition*, 28(5), **539-543**.
140. Ensembl (Genome browser)2019. Available from https://asia.ensembl.org/
141. Ergul, A., Kelly-Cobbs, A., Abdalla, M., & C Fagan, S. (2012). Cerebrovascular complications of diabetes: focus on stroke. *Endocrine, Metabolic & Immune Disorders-Drug Targets (Formerly Current Drug Targets-Immune, Endocrine & Metabolic Disorders)*, 12(2), **148-158**.
142. Eulalio, A., Huntzinger, E., & Izaurralde, E. (2008). Getting to the root of miRNA-mediated gene silencing. *Cell*, 132(1), **9-14**.
143. Eulalio, A., Huntzinger, E., & Izaurralde, E. (2008). GW182 interaction with Argonaute is essential for miRNA-mediated translational repression and mRNA decay. *Nature structural & molecular biology*, 15(4), **346**.
144. Fabian, M. R., & Sonenberg, N. (2012). The mechanics of miRNA-mediated gene silencing: a look under the hood of miRISC. *Nature structural & molecular biology*, 19(6), **586**.
145. Fajans, S. S., Bell, G. I., & Polonsky, K. S. (2001). Molecular mechanisms and clinical pathophysiology of maturity-onset diabetes of the young. *New England Journal of Medicine*, 345(13), **971-980**.

146. Fakhruddin, S., Alanazi, W., & Jackson, K. E. (2017). Diabetes-induced reactive oxygen species: mechanism of their generation and role in renal injury. *Journal of diabetes research*, 2017.

147. Falk, R. J., Scheinman, J. I., Mauer, S. M., & Michael, A. F. (1983). Polyantigenic expansion of basement membrane constituents in diabetic nephropathy. *Diabetes*, *32*(Supplement 2), **34-39**.

148. Faust, K., & Raes, J. (2012). Microbial interactions: from networks to models. *Nature Reviews Microbiology*, 10(8), **538**.

149. Feng, L., Matsumoto, C., Schwartz, A., Schmidt, A. M., Stern, D. M., & Pile-Spellman, J. (2005). Chronic vascular inflammation in patients with type 2 diabetes: endothelial biopsy and RT-PCR analysis. *Diabetes Care*, 28(2), **379-384**.

150. Fernandes, J., Su, W., Rahat-Rozenbloom, S., Wolever, T. M. S., & Comelli, E. M. (2014). Adiposity, gut microbiota and faecal short chain fatty acids are linked in adult humans. *Nutrition & diabetes*, 4(6), **e121**.

151. Fernandes-Alnemri, T., Wu, J., Yu, J. W., Datta, P., Miller, B., Jankowski, W., *et al.* (2007). The pyroptosome: a supramolecular assembly of ASC dimers mediating inflammatory cell death via caspase-1 activation. *Cell death and differentiation*, 14(9), **1590-1640**.

152. Fernandez, E. B. (2006). Monogenic forms of diabetes mellitus. In *Anales de la Real Academia Nacional de Medicina* ,123(1),**211-7**.

153. Fink, S. L., & Cookson, B. T. (2006). Caspase-1-dependent pore formation during pyroptosis leads to osmotic lysis of infected host macrophages. *Cellular microbiology*, 8(11), **1812-1825**.

154. Fiorentino, L., Cavalera, M., Mavilio, M., Conserva, F., Menghini, R., Gesualdo, L., & Federici, M. (2013). Regulation of TIMP3 in diabetic nephropathy: a role for microRNAs. *Acta diabetologica*, 50(6), **965-969**.

155. Fioretto, P., Mauer, M., Brocco, E., Velussi, M., Frigato, F., Muollo, B., & Nosadini, R. (1996). Patterns of renal injury in NIDDM patients with microalbuminuria. *Diabetologia*, 39(12), **1569-1576**.

156. Fire, A. Z., & Mello, C. C. (2006). The nobel prize in physiology or medicine 2006. Available from: http://www. nobelprize. org/nobel_prizes/medicine/laureates.

157. Fire, A., Xu, S., Montgomery, M. K., Kostas, S. A., Driver, S. E., & Mello, C. C. (1998). Potent and specific genetic interference by double-stranded RNA in Caenorhabditis elegans. *nature*, 391(6669), **806**.

158. Fleige, S., & Pfaffl, M. W. (2006). RNA integrity and the effect on the real-time qRT-PCR performance. *Molecular aspects of medicine*, 27(2-3), **126-139**.

159. Forbes, J. M., & Cooper, M. E. (2013). Mechanisms of diabetic complications. *Physiological reviews*, 93(1), **137-188**.

160. Forbes, J. M., Coughlan, M. T., & Cooper, M. E. (2008). Oxidative stress as a major culprit in kidney disease in diabetes. *Diabetes*, 57(6), **1446-1454**.

161. Fowler, M. J. (2008). Microvascular and macrovascular complications of diabetes. *Clinical diabetes*, 26(2), **77-82**.

162. Frank LL. (1957). Diabetes mellitus in the texts of old Hindu medicine (Charaka, Susruta, Vagbhata) *Am J Gastroenterol*, 27:**76–95**.

163. Frank RN. (2004). Diabetic retinopathy. *N Engl J Me*.; 350(1):**48–58**.

164. Freshney, R. I. (2015). *Culture of animal cells: a manual of basic technique and specialized applications*. John Wiley & Sons.

165. Friedman, R. C., Farh, K. K. H., Burge, C. B., & Bartel, D. P. (2009). Most mammalian mRNAs are conserved targets of microRNAs. *Genome research*, 19(1), **92-105**.

166. Fu, Y., Wu, N., & Zhao, D. (2017). Function of NLRP3 in the Pathogenesis and Development of Diabetic Nephropathy. *Medical science monitor : international medical journal of experimental and clinical research*, *23*, **3878–3884**.

167. Fujita, T., Ogihara, N., Kamura, Y., Satomura, A., Fuke, Y., Shimizu, C., & Matsumoto, K. (2012). Interleukin-18 contributes more closely to the progression of diabetic nephropathy than other diabetic complications. *Acta diabetologica*, 49(2), **111-117**.

168. Gaal Z., Balogh I. (2019) Monogenic Forms of Diabetes Mellitus. In: Igaz P., Patocs A. (eds) *Genetics of Endocrine Diseases and Syndromes*. Experientia Supplementum, vol 111. Springer, Cham.

169. Gaede, P., Oellgaard, J., Carstensen, B., Rossing, P., Lund-Andersen, H., Parving, H. H., & Pedersen, O. (2016). Years of life gained by multifactorial intervention in patients with type 2 diabetes mellitus and microalbuminuria: 21 years follow-up on the Steno-2 randomised trial. *Diabetologia*, 59(11), **2298-2307**.

170. Gallo, A., Tandon, M., Alevizos, I., & Illei, G. G. (2012). The majority of microRNAs detectable in serum and saliva is concentrated in exosomes. *PloS one*, 7(3), e30679.
171. Garcia-Garcia, P. M., Getino-Melian, M. A., Dominguez-Pimentel, V., & Navarro-Gonzalez, J. F. (2014). Inflammation in diabetic kidney disease. *World journal of diabetes*, 5(4), **431-443**.
172. Garg, A. X., Kiberd, B. A., Clark, W. F., Haynes, R. B., & Clase, C. M. (2002). Albuminuria and renal insufficiency prevalence guides population screening: results from the NHANES III. *Kidney international*, 61(6), **2165-2175**.
173. Garmendia, L., Hernandez, A., Sanchez, M. B., & Martinez, J. L. (2012). Metagenomics and antibiotics. *Clinical Microbiology and Infection*, 18, **27-31**.
174. Gaspari, F., Perico, N., & Remuzzi, G. (1997). Measurement of glomerular filtration rate. *Kidney International Supplement*, (63) **S151-S154**.
175. Gasse, P., Riteau, N., Charron, S., Girre, S., Fick, L., Pétrilli, V., *et al.* (2009). Uric acid is a danger signal activating NALP3 inflammasome in lung injury inflammation and fibrosis. *American journal of respiratory and critical care medicine*, 179(10), **903-913**.
176. Gebert, L. F., Rebhan, M. A., Crivelli, S. E., Denzler, R., Stoffel, M., & Hall, J. (2013). Miravirsen (SPC3649) can inhibit the biogenesis of miR-122. *Nucleic acids research*, 42(1), **609-621**.
177. GeneCards – the human gene database. Available from: https://www.genecards.org/
178. George, M. M., & Copeland, K. C. (2013). Current Treatment Options for Type 2 Diabetes Mellitus in Youth: Today's Realities and Lessons from the TODAY Study. *Current Diabetes Reports*, 13(1), **72–80.**
179. Gheith, O., Farouk, N., Nampoory, N., Halim, M. A., & Al-Otaibi, T. (2015). Diabetic kidney disease: worldwide difference of prevalence and risk factors. *Journal of nephropharmacology*, 5(1), **49–56**.
180. Giacco, F., & Brownlee, M. (2010). Oxidative stress and diabetic complications. *Circulation research*, 107(9), **1058-1070**.
181. Gilbert, R. E. (2014). Sodium–glucose linked transporter-2 inhibitors: potential for renoprotection beyond blood glucose lowering? *Kidney international*, 86(4), **693-700**.

182. Giordano, A., Murano, I., Mondini, E., Perugini, J., Smorlesi, A., Severi, I., *et al*. (2013). Obese adipocytes show ultrastructural features of stressed cells and die of pyroptosis. *Journal of lipid research*, *54*(9), **2423-2436**.

183. Glick, A. D., Jacobson, H. R., & Haralson, M. A. (1992). Mesangial deposition of type I collagen in human glomerulosclerosis. *Human pathology*, 23(12), **1373-1379.**

184. Granata, S., Masola, V., Zoratti, E., Scupoli, M. T., Baruzzi, A., Messa, M., *et al.* (2015). NLRP3 inflammasome activation in dialyzed chronic kidney disease patients. *PLoS One*, 10(3), **e0122272**.

185. GraphPad Prism version 7.00 for Windows, GraphPad Software, La Jolla California USA

186. Greenhill, C. (2013). Gut microbiota: anti-cancer therapies affected by gut microbiota. *Nature Reviews Gastroenterology & Hepatology*, 11(1), **1**.

187. Grishok, A., Pasquinelli, A. E., Conte, D., Li, N., Parrish, S., Ha, I., *et al.* (2001). Genes and mechanisms related to RNA interference regulate expression of the small temporal RNAs that control C. elegans developmental timing. *Cell*, 106(1), **23-34.**

188. Gross, J. L., De Azevedo, M. J., Silveiro, S. P., Canani, L. H., Caramori, M. L., & Zelmanovitz, T. (2005). Diabetic nephropathy: diagnosis, prevention, and treatment. *Diabetes care*, 28(1), **164-176.**

189. Gupta, S., Maratha, A., Siednienko, J., Natarajan, A., Gajanayake, T., Hoashi, S., & Miggin, S. (2017). Analysis of inflammatory cytokine and TLR expression levels in Type 2 Diabetes with complications. *Scientific reports*, 7(1), **7633**.

190. Gwizdek, C., Ossareh-Nazari, B., Brownawell, A. M., Doglio, A., Bertrand, E., Macara, I. G., & Dargemont, C. (2003). Exportin-5 mediates nuclear export of minihelix-containing RNAs. *Journal of Biological Chemistry*, 278(8), **5505-5508.**

191. Haas, M. (2009). Alport syndrome and thin glomerular basement membrane nephropathy: a practical approach to diagnosis. *Archives of pathology & laboratory medicine*, 133(2), 224-232.

192. Hackett, E., & Jacques, N. (2009). Clinical focus-Type 2 diabetes-Pathophysiology and clinical features. *Clinical Pharmacist*, 1(11), **475**.

193. Hackfort, B. T., & Mishra, P. K. (2016). Emerging role of hydrogen sulfide-microRNA crosstalk in cardiovascular diseases. *American Journal of Physiology-Heart and Circulatory Physiology*, 310(7), **H802-H812**.

194. Haffner S. M., Lehto, S, Ronnemaa, T, Pyorala, K, Laakso, M., (1998). Mortality from coronary heart disease in subjects with type 2 diabetes and in nondiabetic subjects with and without prior myocardial infarction. *N Engl J Med*; 339(4):**229–234**.

195. Hamar, P. (2012). Role of Regulatory Micro RNAs in Type 2 Diabetes Mellitus–Related Inflammation. *Nucleic acid therapeutics*, 22(5), **289-294**.

196. Hamid, S., Gul, A., & Hamid, Q. (2016). Relationship of cytokines and AGE products in diabetic and non-diabetic patients with cataract. *International journal of health sciences*, 10(4), **507**.

197. Han, J., Lee, Y., Yeom, K. H., Kim, Y. K., Jin, H., & Kim, V. N. (2004). The Drosha-DGCR8 complex in primary microRNA processing. *Genes & development*, 18(24), **3016-3027**.

198. Han, M. H., Goud, S., Song, L., & Fedoroff, N. (2004). The Arabidopsis double-stranded RNA-binding protein HYL1 plays a role in microRNA-mediated gene regulation. *Proceedings of the National Academy of Sciences*, 101(4), **1093-1098.**

199. Haneda, M., Utsunomiya, K., Koya, D., Babazono, T., Moriya, T., Makino, H., & Inaba, M. (2015). A new classification of diabetic nephropathy 2014: a report from Joint Committee on Diabetic Nephropathy. *Journal of diabetes investigation*, 6(2), **242-246**.

200. Hanna, J., Hossain, G. S., & Kocerha, J. (2019). The potential for microRNAs in clinical research. *Frontiers in genetics*, 10, **47**8.

201. Harijith, A., Ebenezer, D. L., & Natarajan, V. (2014). Reactive oxygen species at the crossroads of inflammasome and inflammation. *Front Physiol*, 5(352.10), **3389.**

202. Hattersley, A. T., & Patel, K. A. (2017). Precision diabetes: learning from monogenic diabetes. *Diabetologia*, 60(5), **769-777**.

203. He, Y., Hara, H., & Nunez, G. (2016). Mechanism and regulation of NLRP3 inflammasome activation. *Trends in biochemical sciences*, 41(12), **1012-1021**.

204. Hehemann, J. H., Correc, G., Barbeyron, T., Helbert, W., Czjzek, M., & Michel, G. (2010). Transfer of carbohydrate-active enzymes from marine bacteria to Japanese gut microbiota. *Nature*, 464(7290), **908**.

205. Heid, M. E., Keyel, P. A., Kamga, C., Shiva, S., Watkins, S. C., & Salter, R. D. (2013). Mitochondrial reactive oxygen species induces NLRP3-dependent lysosomal damage and inflammasome activation. *The Journal of Immunology*, 191(10), **5230-5238**.

206. Henle, G., & Deinhardt, F. (1957). The establishment of strains of human cells in tissue culture. *The Journal of Immunology*, 79(1), **54-59.**

207. Hills, A. P., Arena, R., Khunti, K., Yajnik, C. S., Jayawardena, R., Henry, C. J., & Misra, A. (2018). Epidemiology and determinants of type 2 diabetes in south Asia. *The Lancet Diabetes & Endocrinology*, 6(12), **966-978**.

208. Himsworth, H. P. (1936). Diabetes mellitus. Its differentiation into insolin-sensitive and insulin-insensitive types. *Lancet*, 230, **127-130**.

209. Hirai, F. E., Tielsch, J. M., Klein, B. E., & Klein, R. (2011). Ten-year change in vision-related quality of life in type 1 diabetes: Wisconsin epidemiologic study of diabetic retinopathy. *Ophthalmology*, 118(2), **353-358**.

210. Hoffman, H. M., Mueller, J. L., Broide, D. H., Wanderer, A. A., & Kolodner, R. D. (2001). Mutation of a new gene encoding a putative pyrin-like protein causes familial cold autoinflammatory syndrome and Muckle–Wells syndrome. *Nature genetics*, 29(3), **301**.

211. Holman, R. R., Paul, S. K., Bethel, M. A., Matthews, D. R., & Neil, H. A. W. (2008). 10-year follow-up of intensive glucose control in type 2 diabetes. *New England Journal of Medicine*, 359(15), **1577-1589**.

212. Hong, D., Zheng, T., Jia-Qing, S., Jian, W., Zhi-hong, L., & Lei-shi, L. (2007). Nodular glomerular lesion: a later stage of diabetic nephropathy?. *Diabetes research and clinical practice*, 78(2), **189-195.**

213. Horlyck, A., Gundersen, H. J. G., & Osterby, R. (1986). The cortical distribution pattern of diabetic glomerulopathy. *Diabetologia*, 29(3), **146-150.**

214. Hornung, V., & Latz, E. (2010). Critical functions of priming and lysosomal damage for NLRP3 activation. *European journal of immunology*, 40(3), **620-623**.

215. Hsieh, F. C., Lee, C. L., Chai, C. Y., Chen, W. T., Lu, Y. C., & Wu, C. S. (2013). Oral administration of Lactobacillus reuteri GMNL-263 improves insulin resistance and ameliorates hepatic steatosis in high fructose-fed rats. *Nutrition & metabolism*, 10(1), **35**. http://www. https://www.medicalnewstoday.com/articles/317484.php

216. Huang, T. H., Fan, B., Rothschild, M. F., Hu, Z. L., Li, K., & Zhao, S. H. (2007). MiRFinder: an improved approach and software implementation for genome-wide fast microRNA precursor scans. *BMC bioinformatics*, 8(1), **341**

217. Huebschmann, A. G., Regensteiner, J. G., Vlassara, H., & Reusch, J. E. (2006). Diabetes and advanced glycoxidation end products. *Diabetes care*, 29(6), **1420-1432**.

218. Human Protein Atlas. Available from http://www.proteinatlas.org

219. Hutvagner, G., McLachlan, J., Pasquinelli, A. E., Bálint, É., Tuschl, T., & Zamore, P. D. (2001). A cellular function for the RNA-interference enzyme Dicer in the maturation of the let-7 small temporal RNA. *Science*, 293(5531), **834-838**.

220. Idriss, H. T., & Naismith, J. H. (2000). TNFα and the TNF receptor superfamily: Structure-function relationship (s). *Microscopy research and technique*, 50(3), **184-195**.

221. Illumina, I. (2013). 16S Metagenomic sequencing library preparation. Preparing 16S Ribosomal RNA Gene Amplicons for the Illumina MiSeq System, **1-28**.

222. In vivo function of NcRNA in living organisms. Retrieved from: https://www.whatisepigenetics.com/non-coding-rna/#fn-174-2

223. Inada, T., & Makino, S. (2014). Novel roles of the multi-functional CCR4-NOT complex in post-transcriptional regulation. *Frontiers in genetics*, 5, **135**.

224. International Diabetes Federation. IDF Diabetes Atlas, 9th edn. Brussels, Belgium: 2019. Available at: http://www.diabetesatlas.org

225. Inzucchi, S. E., Bergenstal, R. M., Buse, J. B., Diamant, M., Ferrannini, E., Nauck, M., & Matthews, D. R. (2015). Management of hyperglycemia in type 2 diabetes, 2015: a patient-centered approach: update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes care*, 38(1), **140-149**.

226. Ito, M., Makino, N., Matsuda, A., Ikeda, Y., Kakizaki, Y., Saito, Y., *et al.* (2017). High Glucose Accelerates Cell Proliferation and Increases the Secretion and mRNA Expression of Osteopontin in Human Pancreatic Duct Epithelial Cells. *International journal of molecular sciences*, *18*(4), 807.

227. Jain, M. (2012). Histopathological changes in diabetic kidney disease. *Clinical Queries: Nephrology*, 1(2), **127-133**.

228. Jang, T. H., Park, S. C., Yang, J. H., Kim, J. Y., Seok, J. H., Park, U. S., *et al.* (2017). Cryopreservation and its clinical applications. *Integrative medicine research*, 6(1), **12-18**.

229. Jarroux, J., Morillon, A., & Pinskaya, M. (2017). History, discovery, and classification of lncRNAs. In *Long Non Coding RNA Biology* (pp. 1-46). Springer, Singapore.

230. Jia, W., Li, H., Zhao, L., & Nicholson, J. K. (2008). Gut microbiota: a potential new territory for drug targeting. *Nature reviews Drug discovery*, 7(2), **123**.

231. Jialal, I., Kaur, H., & Devaraj, S. (2014). Toll-like receptor status in obesity and metabolic syndrome: a translational perspective. *The Journal of Clinical Endocrinology & Metabolism*, 99(1), **39-48**.

232. Jovel, J., Patterson, J., Wang, W., Hotte, N., O'Keefe, S., Mitchel, T., *et al.* (2016). Characterization of the gut microbiome using 16S or shotgun metagenomics. Frontiers in microbiology, 7, 459.

233. Kang, Y. S., Lee, M. H., Song, H. K., Ko, G. J., Kwon, O. S., Lim, T. K., *et al*. (2010). CCR2 antagonism improves insulin resistance, lipid metabolism, and diabetic nephropathy in type 2 diabetic mice. *Kidney international*, 78(9), **883-894**.

234. Kanneganti, T. D. (2017). Inflammatory bowel disease and the NLRP3 inflammasome. *New England Journal of Medicine*, 377(7), **694-696**.

235. Kanwar, Y. S., Sun, L., Xie, P., Liu, F., & Chen, S. (2011). A Glimpse of Various Pathogenetic Mechanisms of Diabetic Nephropathy. *Annual Review of Pathology*, 6, **395–423.**

236. Karihaloo, A. (2015). Role of inflammation in polycystic kidney disease. In *Polycystic Kidney Disease [Internet]*. Codon Publications.

237. Karlsson, F. H., Fak, F., Nookaew, I., Tremaroli, V., Fagerberg, B., Petranovic, D., *et al.* (2012). Symptomatic atherosclerosis is associated with an altered gut metagenome. *Nature communications*, 3, 1245.

238. Karolina, D. S., Silambarasan, M., Armugam, A., & Yeyaseelan, K. (2014). MicroRNA and Endothelial Dysfunction in relation to Ob esity and Type2 Diabetes. *J Mol genet med.* S, 1, **1747-0862**.

239. Kato, Z., Jee, J., Shikano, H., Mishima, M., Ohki, I., Ohnishi, H., (2003). The structure and binding mode of interleukin-18. *Nature Structural & Molecular Biology*, 10(11), **966-971**.

240. Katz, A., Caramori, M. L. A., Sisson-Ross, S., Groppoli, T., Basgen, J. M., & Mauer, M. (2002). An increase in the cell component of the cortical interstitium antedates interstitial fibrosis in type 1 diabetic patients. *Kidney international*, 61(6), **2058-2065**.

241. Kawai, T., & Akira, S. (2010). The role of pattern-recognition receptors in innate immunity: update on Toll-like receptors. *Nature immunology*, 11(5), **373-84**.

242. Kawai, T., & Akira, S. (2011). Toll-like receptors and their crosstalk with other innate receptors in infection and immunity. *Immunity*, 34(5), **637-650**.

243. Kawanami, D., Matoba, K., & Utsunomiya, K. (2016). Signaling pathways in diabetic nephropathy. *Histology and Histopathology*, 31(10), **1059-1067**.

244. Kawasaki, T., & Kawai, T. (2014). Toll-like receptor signaling pathways. *Frontiers in immunology*, 5, **461**.

245. Kazancioglu, R. (2013). Risk factors for chronic kidney disease: an update. *Kidney international supplements*, 3(4), 368-371.

246. Kelly, D. J., Chanty, A., Gow, R. M., Zhang, Y., & Gilbert, R. E. (2005). Protein kinase Cβ inhibition attenuates osteopontin expression, macrophage recruitment, and tubulointerstitial injury in advanced experimental diabetic nephropathy. *Journal of the American Society of Nephrology*, 16(6), **1654-1660**.

247. Kempen, J. H., O'Colmain, B. J., Leske, M. C., Haffner, S. M., Klein, R., Moss, S. E., & Hamman, R. F. (2004). The prevalence of diabetic retinopathy among adults in the United States. *Archives of ophthalmology (Chicago, Ill.: 1960)*, 122(4), **552-563**.

248. Kennedy, P. J., Cryan, J. F., Dinan, T. G., & Clarke, G. (2014). Irritable bowel syndrome: a microbiome-gut-brain axis disorder?. *World journal of gastroenterology: WJG*, 20(39), **14105**.

249. Ketting, R. F., Fischer, S. E., Bernstein, E., Sijen, T., Hannon, G. J., & Plasterk, R. H. (2001). Dicer functions in RNA interference and in synthesis of small RNA involved in developmental timing in C. elegans. *Genes & development*, 15(20), **2654-2659**.

250. Kilpatrick E.S. (2004). HbA1c measurement. *J Clin Pathol*. 2004;57(4):**344–345**.

251. Kim, M. K. (2017). Treatment of diabetic kidney disease: current and future targets. *The Korean journal of internal medicine*, 32(4), **622-630**.

252. Kim, V. N. (2005). MicroRNA biogenesis: coordinated cropping and dicing. *Nature reviews Molecular cell biology*, 6(5), **376**.

253. Kim, Y. G., Kim, S. M., Kim, K. P., Lee, S. H., & Moon, J. Y. (2019). The Role of Inflammasome-Dependent and Inflammasome-Independent NLRP3 in the Kidney. *Cells*, 8(11), **1389**.

254. Kim, Y., Kleppel, M. M., Butkowski, R., Mauer, S. M., Wieslander, J., & Michael, A. F. (1991). Differential expression of basement membrane collagen chains in diabetic nephropathy. *The American journal of pathology*, 138(2), **413**.

255. Kimmelstiel, P., & Wilson, C. (1936). Intercapillary lesions in the glomeruli of the kidney. *The American journal of pathology*, 12(1), **83-97**.

256. Kimura, I., Inoue, D., Hirano, K., & Tsujimoto, G. (2014). The SCFA receptor GPR43 and energy metabolism. *Frontiers in endocrinology*, 5, **85**.

257. Kohner, E. M. (2003). Aspirin for diabetic retinopathy. *BMJ*;**327:1060.**

258. Kono, D. H., Haraldsson, M. K., Lawson, B. R., Pollard, K. M., Koh, Y. T., Du, X., *et al.* (2009). Endosomal TLR signaling is required for anti-nucleic acid and rheumatoid factor autoantibodies in lupus. *Proceedings of the National Academy of Sciences*, 106(29), **12061-12066**.

259. Kota, J., Chivukula, R. R., O'Donnell, K. A., Wentzel, E. A., Montgomery, C. L., Hwang, H.W. (2009). Therapeutic microRNA delivery suppresses tumorigenesis in a murine liver cancer model. *Cell*, 137(6), **1005-1017**.

260. Kovarova, M., Hesker, P. R., Jania, L., Nguyen, M., Snouwaert, J. N., Xiang, Z., *et al.* (2012). NLRP1-dependent pyroptosis leads to acute lung injury and morbidity in mice. *The Journal of Immunology*, 189(4), **2006-2016**.

261. Koya, D., & King, G. L. (1998). Protein kinase C activation and the development of diabetic complications. *Diabetes*, 47(6), **859-866**.

262. Kramer, H. J., Nguyen, Q. D., Curhan, G., & Hsu, C. Y. (2003). Renal insufficiency in the absence of albuminuria and retinopathy among adults with type 2 diabetes mellitus. *Jama*, 289(24), **3273-3277**.

263. Krisha, McCoy (2009, November 03). The History of Diabetes. Retrieved from http://www. https://www.everydayhealth.com/diabetes/understanding/diabetes-mellitus-through-time.aspx.

264. Kroemer, G., Galluzzi, L., Vandenabeele, P., Abrams, J., Alnemri, E. S., Baehrecke, E. H., & Hengartner, M. (2009). Classification of cell death: recommendations of the Nomenclature Committee on Cell Death 2009. *Cell death and differentiation*, 16(1), **3**.

265. Krolewski, A. S. (2015). Progressive renal decline: the new paradigm of diabetic nephropathy in type 1 diabetes. *Diabetes Care*, 38(6), **954-962**.

266. Kuemmerle-Deschner, J. B. (2015, July). CAPS—pathogenesis, presentation and treatment of an autoinflammatory disease. In *Seminars in immunopathology* (Vol. 37, No. 4, pp. 377-385). Springer Berlin Heidelberg.

267. Kumar, H., Kawai, T., & Akira, S. (2009). Toll-like receptors and innate immunity. *Biochemical and biophysical research communications*, 388(4), **621-625**.

268. Labbe, K., & Saleh, M. (2011). Pyroptosis: a caspase-1-dependent programmed cell death and a barrier to infection. In *The Inflammasomes* (pp. 17-36). Springer, Basel.

269. Lai, E. C., Tomancak, P., Williams, R. W., & Rubin, G. M. (2003). Computational identification of Drosophila microRNA genes. *Genome biology*, 4(7), **R42**.

270. Laing, S. P., Swerdlow, A. J., Slater, S. D., Burden, A. C., Morris, A., Waugh, N. R., & Patterson, C. C. (2003). Mortality from heart disease in a cohort of 23,000 patients with insulin-treated diabetes. *Diabetologia*, 46(6), **760-765**.

271. Lakhtakia R. (2013). The history of diabetes mellitus. *Sultan Qaboos University medical journal*, 13(3), **368–370**.

272. Lambeth, S. M., Carson, T., Lowe, J., Ramaraj, T., Leff, J. W., Luo, L., *et al.* (2015). Composition, diversity and abundance of gut microbiome in prediabetes and type 2 diabetes. *Journal of diabetes and obesity*, 2(3), **1.**

273. Lampropoulou, I. T.,Stangou, M., Papagianni, A., Didangelos, T., Iliadis, F., & Efstratiadis, G. (2014). TNF-α and microalbuminuria in patients with type 2 diabetes mellitus. *Journal of diabetes research*, 2014.

274. Larsen, N., Vogensen, F. K., Van Den Berg, F. W., Nielsen, D. S., Andreasen, A. S., Pedersen, B. K., & Jakobsen, M. (2010). Gut microbiota in human adults with type 2 diabetes differs from non-diabetic adults. *PloS one*, 5(2), **e9085**.

275. Latz, E., Xiao, T. S., & Stutz, A. (2013). Activation and regulation of the inflammasomes. *Nature Reviews Immunology*, 13(6), **397-411**.

276. Lazar, V., Ditu, L. M., Pircalabioru, G. G., Gheorghe, I., Curutiu, C., Holban, A. M. Chifiriuc, M. C. (2018). Aspects of Gut Microbiota and Immune System Interactions in Infectious Diseases, Immunopathology, and Cancer. *Frontiers in immunology*, 9, **1830**.

277. Lazar, V., Ditu, L. M., Pircalabioru, G. G., Picu, A., Petcu, L., Cucu, N., & Chifiriuc, M. C. (2019). Gut Microbiota, Host Organism, and Diet Trialogue in Diabetes and Obesity. *Frontiers in Nutrition*, 6.

278. Lee, H. B., Yu, M. R., Yang, Y., Jiang, Z., & Ha, H. (2003). Reactive oxygen species-regulated signaling pathways in diabetic nephropathy. *Journal of the American Society of Nephrology*, 14(suppl 3), **S241-S245**.

279. Lee, H. M., Kim, J. J., Kim, H. J., Shong, M., Ku, B. J., & Jo, E. K. (2013). Upregulated NLRP3 inflammasome activation in patients with type 2 diabetes. *Diabetes*, 62(1), **194-204**.

280. Lee, J., Wan, J., Lee, L., Peng, C., Xie, H., & Lee, C. (2017). Study of the NLRP3 inflammasome component genes and downstream cytokines in patients with type 2 diabetes mellitus with carotid atherosclerosis. *Lipids in health and disease*, 16(1), **217.**

281. Lee, R. C., Feinbaum, R. L., & Ambros, V. (1993). The C. elegans heterochronic gene lin-4 encodes small RNAs with antisense complementarity to lin-14. *cell*, 75(5), **843-854**.

282. Lee, Y., Han, J., Yeom, K. H., Jin, H., & Kim, V. N. (2006, January). Drosha in primary microRNA processing. In *Cold Spring Harbor symposia on quantitative biology* (Vol. 71, pp. 51-57). Cold Spring Harbor Laboratory Press.

283. Lee, Y., Jeon, K., Lee, J. T., Kim, S., & Kim, V. N. (2002). MicroRNA maturation: stepwise processing and subcellular localization. *The EMBO journal*, 21(17), **4663-4670**.

284. Lee, Y., Kim, M., Han, J., Yeom, K. H., Lee, S., Baek, S. H., & Kim, V. N. (2004). MicroRNA genes are transcribed by RNA polymerase II. *The EMBO journal*, 23(20), **4051-4060**.

285. Leemans, J. C., Stokman, G., Claessen, N., Rouschop, K. M., Teske, G. J., Kirschning, C. J., *et al.* (2005). Renal-associated TLR2 mediates ischemia/reperfusion injury in the kidney. *The Journal of clinical investigation*, 115(10), **2894-2903**.

286. Leong, W. B., Nolen, M., Thomas, G. N., Adab, P., Banerjee, D., & Taheri, S. (2014). The impact of hypoxemia on nephropathy in extremely obese patients with type 2 diabetes mellitus. *Journal of Clinical Sleep Medicine,* 10(07), **773-778**.

287. Ley, R. E., Hamady, M., Lozupone, C., Turnbaugh, P. J., Ramey, R. R., Bircher, J. S., *et al.* (2008). Evolution of mammals and their gut microbes. *Science*, 320(5883), **1647-1651**.

288. Li, C., Li, X., Han, H., Cui, H., Peng, M., Wang, G., & Wang, Z. (2016). Effect of probiotics on metabolic profiles in type 2 diabetes mellitus: A meta-analysis of randomized, controlled trials. *Medicine*, 95(26).

289. Li, S. C., Pan, C. Y., & Lin, W. C. (2006). Bioinformatic discovery of microRNA precursors from human ESTs and introns. *BMC genomics*, 7(1), **164**.

290. Li, X., Du, N., Zhang, Q., Li, J., Chen, X., Liu, X., *et al.* (2014). MicroRNA-30d regulates cardiomyocyte pyroptosis by directly targeting foxo3a in diabetic cardiomyopathy. *Cell death & disease*, 5(10), **e1479**.

291. Liang, D., Liu, H. F., Yao, C. W., Liu, H. Y., Huang-FU, C. M., Chen, X. W., *et al.* (2007). Effects of interleukin 18 on injury and activation of human proximal tubular epithelial cells. *Nephrology*, 12(1), **53-61**.

292. Lim, L. P., Lau, N. C., Weinstein, E. G., Abdelhakim, A., Yekta, S., Rhoades, M. W., *et al.* (2003). The microRNAs of Caenorhabditis elegans. *Genes & development*, 17(8), **991-1008.**

293. Lin, M., & Tang, S. C. (2013). Toll-like receptors: sensing and reacting to diabetic injury in the kidney. *Nephrology Dialysis Transplantation*, *29*(4), **746-754**.

294. Lin, M., Yiu, W. H., Wu, H. J., Chan, L. Y., Leung, J. C., Au, W. S., *et al*. (2012). Toll-like receptor 4 promotes tubular inflammation in diabetic nephropathy. *Journal of the American Society of Nephrology*, 23(1), **86-102**.

295. Lin, S. L., Miller, J. D., & Ying, S. Y. (2006). Intronic microRNA (miRNA). *BioMed Research International*, 2006.

296. Liu, K. H., Zhou, Q. L., Ao, X., Tang, T. F., Hong, X. M., & Bao, R. L. (2010). Effect of spironolactone on the expression of Toll-like receptor 4 in renal tubular epithelia cells exposed to high glucose. *Chinese journal of contemporary pediatrics*, 12(4), **280-283**.

297. Losko, M., Kotlinowski, J., & Jura, J. (2016). Long noncoding RNAs in metabolic syndrome related disorders. *Mediators of inflammation*, 2016.

298. Lu, A., & Wu, H. (2015). Structural mechanisms of inflammasome assembly. *The FEBS journal*, 282(3), **435-444**.

299. Lu, A., Li, Y., Schmidt, F. I., Yin, Q., Chen, S., Fu, T. M., *et al*. (2016). Molecular basis of caspase-1 polymerization and its inhibition by a new capping mechanism. *Nature structural & molecular biology*, 23(5), **416-425**.

300. Lund, E., Guttinger, S., Calado, A., Dahlberg, J. E., & Kutay, U. (2004). Nuclear export of microRNA precursors. *science*, 303(5654), **95-98.**

301. Luo, B., Li, B., Wang, W., Liu, X., Xia, Y., Zhang, C., *et al.* (2014). NLRP3 gene silencing ameliorates diabetic cardiomyopathy in a type 2 diabetes rat model. *PloS one*, 9(8), **e104771**.

302. Lv, J., Jia, R., Yang, D., Zhu, J., & Ding, G. (2009). Candesartan attenuates Angiotensin II-induced mesangial cell apoptosis via TLR4/MyD88 pathway. *Biochemical and biophysical research communications*, 380(1), **81-86**.

303. Ma, J., Chadban, S. J., Zhao, C. Y., Chen, X., Kwan, T., Panchapakesan, U., *et al.* (2014). TLR4 activation promotes podocyte injury and interstitial fibrosis in diabetic nephropathy. *PLoS One*, 9(5), e97985.

304. MacFarlane, L. A., & R Murphy, P. (2010). MicroRNA: biogenesis, function and role in cancer. *Current genomics*, 11(7), **537-561**.

305. Machnicka, M. A., Milanowska, K., Osman Oglou, O., Purta, E., Kurkowska, M., Olchowik, A., *et al*. (2012). MODOMICS: a database of RNA modification pathways—2013 update. *Nucleic acids research*, 41(D1), **D262-D267**.

306. MacIsaac, R. J., Tsalamandris, C., Panagiotopoulos, S., Smith, T. J., McNeil, K. J., & Jerums, G. (2004). Nonalbuminuric renal insufficiency in type 2 diabetes. *Diabetes care*, 27(1), **195-200**.

307. Magez, S., Radwanska, M., Drennan, M., Fick, L., Baral, T. N., Allie, N., *et al.* (2007). Tumor necrosis factor (TNF) receptor-1 (TNFp55) signal transduction and macrophage-derived soluble TNF are crucial for nitric oxide-mediated Trypanosoma congolense parasite killing. *Journal of Infectious Diseases*, 196(6), **954-962**.

308. Mahmoud, R. A., El-Ezz, S. A., & Hegazy, A. S. (2004). Increased serum levels of interleukin-18 in patients with diabetic nephropathy. *The Italian journal of biochemistry*, 53(2), **73-81**.

309. Maini, R. N., Elliott, M. J., Brennan, F. M., & Feldmann, M. (1995). Beneficial effects of tumour necrosis factor-alpha (TNF-α) blockade in rheumatoid arthritis (RA). *Clinical & Experimental Immunology*, 101(2), **207-212**.

310. Mandal, R. S., Saha, S., & Das, S. (2015). Metagenomic surveys of gut microbiota. *Genomics, proteomics & bioinformatics*, 13(3), **148-158**.

311. Mao, M., Fu, G., Wu, J. S., Zhang, Q. H., Zhou, J., Kan, L. X., *et al*. (1998). Identification of genes expressed in human CD34+ hematopoietic stem/progenitor cells by

expressed sequence tags and efficient full-length cDNA cloning. *Proceedings of the National Academy of Sciences*, *95*(14), **8175-8180**.

312. Mariathasan, S., Newton, K., Monack, D. M., Vucic, D., French, D. M., Lee, W. P., *et al.* (2004). Differential activation of the inflammasome by caspase-1 adaptors ASC and Ipaf. *Nature*, 430(6996), **213-218**.
313. Mariathasan, S., Weiss, D. S., Newton, K., McBride, J., O'Rourke, K., Roose-Girma, M., *et al.* (2006). Cryopyrin activates the inflammasome in response to toxins and ATP. *Nature*, 440(7081), **228-232**.
314. Markowitz, G. S., Lin, J., Valeri, A. M., Avila, C., Nasr, S. H., & D'Agati, V. D. (2002). Idiopathic nodular glomerulosclerosis is a distinct clinicopathologic entity linked to hypertension and smoking. *Human pathology*, 33(8), **826-835**.
315. Mason, R. M., & Wahab, N. A. (2003). Extracellular matrix metabolism in diabetic nephropathy. *Journal of the American Society of Nephrology*, 14(5), **1358-1373.**
316. Mathonnet, G., Fabian, M. R., Svitkin, Y. V., Parsyan, A., Huck, L., Murata, T., *et al.* (2007). MicroRNA inhibition of translation initiation in vitro by targeting the cap-binding complex eIF4F. *Science*, 317(5845), **1764-1767**.
317. Matzinger, P. (1994). Tolerance, danger, and the extended family. *Annual review of immunology*, 12(1), **991-1045**.
318. Mauer, S. M., Steffes, M. W., & Brown, D. M. (1981). The kidney in diabetes. *The American journal of medicine*, 70(3), **603-612.**
319. Mauer, S. M., Steffes, M. W., Ellis, E. N., Sutherland, D. E., Brown, D. M., & Goetz, F. C. (1984). Structural-functional relationships in diabetic nephropathy. *The Journal of clinical investigation*, 74(4), **1143-1155**.
320. Mbulaiteye, S. M., Hisada, M., & El-Omar, E. M. (2009). Helicobacter pylori associated global gastric cancer burden. Frontiers in bioscience: a journal and virtual library, 14, **1490**.
321. McKenzie, C., Tan, J., Macia, L., & Mackay, C. R. (2017). The nutrition-gut microbiome-physiology axis and allergic diseases. *Immunological reviews*, 278(1), **277-295**.
322. Medzhitov, R. (2007). Recognition of microorganisms and activation of the immune response. *Nature*, 449(7164), **819-826**.

323. Meister, G., & Tuschl, T. (2004). Mechanisms of gene silencing by double-stranded RNA. *Nature,* 431(7006), **343.**

324. Meister, G., Landthaler, M., Patkaniowska, A., Dorsett, Y., Teng, G., & Tuschl, T. (2004). Human Argonaute2 mediates RNA cleavage targeted by miRNAs and siRNAs. *Molecular cell*, 15(2), **185-197.**

325. Melchior, H., Kurch-Bek, D., & Mund, M. (2017). The prevalence of gestational diabetes: a population-based analysis of a nationwide screening program. *Deutsches Arzteblatt International*, 114(24), **412-418**.

326. Membrez, M., Blancher, F., Jaquet, M., Bibiloni, R., Cani, P. D., Burcelin, R. G., & Chou, C. J. (2008). Gut microbiota modulation with norfloxacin and ampicillin enhances glucose tolerance in mice. *The FASEB Journal*, 22(7), **2416-2426**.

327. Methe, H., Kim, J. O., Kofler, S., Nabauer, M., & Weis, M. (2005). Statins decrease Toll-like receptor 4 expression and downstream signaling in human CD14+ monocytes. *Arteriosclerosis, thrombosis, and vascular biology*, 25(7), **1439-1445**.

328. Mezouar, S., Chantran, Y., Michel, J., Fabre, A., Dubus, J. C., Leone, M., *et al.* (2018). Microbiome and the immune system: from a healthy steady-state to allergy associated disruption. *Human Microbiome Journal*.2018.

329. Micheau, O., & Tschopp, J. (2003). Induction of TNF receptor I-mediated apoptosis via two sequential signaling complexes. *Cell*, 114(2), **181-190**.

330. Mirza, R. E., Fang, M. M., Weinheimer-Haus, E. M., Ennis, W. J., & Koh, T. J. (2014). Sustained inflammasome activity in macrophages impairs wound healing in type 2 diabetic humans and mice. *Diabetes*, 63(3), **1103-1114**.

331. Mitchell, P. S., Parkin, R. K., Kroh, E. M., Fritz, B. R., Wyman, S. K., Pogosova-Agadjanyan, E. L., *et al*. (2008). Circulating microRNAs as stable blood-based markers for cancer detection. *Proceedings of the National Academy of Sciences*, 105(30), **10513-10518**.

332. Mithal, A., Bansal, B., & Kalra, S. (2015). Gestational diabetes in India: Science and society. *Indian journal of endocrinology and metabolism*, 19(6), **701–704**.

333. Mogensen, C. E. (2000). Microalbuminuria, blood pressure and diabetic renal disease: origin and development of ideas. In *The kidney and hypertension in diabetes mellitus* (pp. 655-706). Springer, Boston, MA.

334. Mogensen, C. E., & Christensen, C. K. (1984). Predicting diabetic nephropathy in insulin-dependent patients. *New England Journal of Medicine*, 311(2), **89-93**.

335. Mohamadpour, Z., Sharifi, L., Norouzzadeh, M., Kalikias, Y., & Mahmoudi, M. (2016). Hyperglycemia induction in HepG2 cell line. *International Journal of Health Studies*, 2(1), **28**.

336. Moore, D. J., Gregory, J. M., Kumah-Crystal, Y. A., & Simmons, J. H. (2009). Mitigating micro-and macro-vascular complications of diabetes beginning in adolescence. *Vascular health and risk management*, 5, **1015**.

337. Moreno-Indias, I., Cardona, F., Tinahones, F. J., & Queipo-Ortuño, M. I. (2014). Impact of the gut microbiota on the development of obesity and type 2 diabetes mellitus. *Frontiers in microbiology*, 5, **190**.

338. Moura, J., Borsheim, E., & Carvalho, E. (2014). The role of micrornas in diabetic complications—special emphasis on wound healing. *Genes*, 5(4), **926-956**.

339. Movat, H. Z., & Mcgregor, D. D. (1959). The fine structure of the glomerulus in membranous glomerulonephritis (lipoid nephrosis) in adults. *American journal of clinical pathology*, 32(2), **109-127**.

340. Mrozinska, S., Radkowski, P., Gosiewski, T., Szopa, M., Bulanda, M., Ludwig-Galezowska, A. H., *et al*. (2016). Qualitative parameters of the colonic flora in patients with HNF1A-MODY are different from those observed in type 2 diabetes mellitus. *Journal of diabetes research*, 2016.

341. Mudaliar, H., Pollock, C., & Panchapakesan, U. (2014). Role of Toll-like receptors in diabetic nephropathy. *Clinical Science*, 126(10), **685-694**.

342. Mukherji, S., Ebert, M. S., Zheng, G. X., Tsang, J. S., Sharp, P. A., & van Oudenaarden, A. (2011). MicroRNAs can generate thresholds in target gene expression. *Nature genetics*, 43(9), **854**.

343. Mulay, S. R. (2019). Multifactorial functions of the inflammasome component NLRP3 in pathogenesis of chronic kidney diseases. *Kidney international*, 96 (1), **58-66.**

344. Murussi M, Baglio P, Gross JL, Silveiro SP. (2002). Risk factors for microalbuminuria and macroalbuminuria in type 2 diabetic patients: a 9-year follow-up study. *Diabetes Care* 25:**1101–1103**.

345. Muruve, D. A., Petrilli, V., Zaiss, A. K., White, L. R., Clark, S. A., Ross, P. J., *et al.* (2008). The inflammasome recognizes cytosolic microbial and host DNA and triggers an innate immune response. *Nature*, 452(7183), **103**.

346. Naito, E., Yoshida, Y., Makino, K., Kounoshi, Y., Kunihiro, S., Takahashi, R., *et al.* (2011). Beneficial effect of oral administration of Lactobacillus casei strain Shirota on insulin resistance in diet-induced obesity mice. *Journal of applied microbiology*, 110(3), **650-657**.

347. Nakamura, A., Shikata, K., Hiramatsu, M., Nakatou, T., Kitamura, T., Wada, J., *et al.* (2005). Serum interleukin-18 levels are associated with nephropathy and atherosclerosis in Japanese patients with type 2 diabetes. *Diabetes care*, 28(12), **2890-2895**.

348. Nam, J. W., Shin, K. R., Han, J., Lee, Y., Kim, V. N., & Zhang, B. T. (2005). Human microRNA prediction through a probabilistic co-learning model of sequence and structure. *Nucleic acids research*, 33(11), **3570-3581**.

349. Nasri, H., & Rafieian-Kopaei, M. (2014). Metformin: Current knowledge. *Journal of Research in Medical Sciences* : The Official Journal of Isfahan University of Medical Sciences, 19(7), **658–664.**

350. Nathan, D. M. (1993). Long-term complications of diabetes mellitus. *New England journal of medicine*, 328(23), **1676-1685.**

351. Nathan, D. M., & DCCT/EDIC Research Group. (2014). The diabetes control and complications trial/epidemiology of diabetes interventions and complications study at 30 years: overview. *Diabetes care*, 37(1), **9-16**.

352. Nathan, D. M., Genuth, S., Lachin, J., Cleary, P., Crofford, O., Davis, M., & Diabetes Control and Complications Trial Research Group. (1993). The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *The New England journal of medicine*, 329(14), **977-86.**

353. Nathan, D. M., Zinman, B., Cleary, P. A., Backlund, J. Y. C., Genuth, S., Miller, R. & Epidemiology of Diabetes Interventions and Complications (DCCT/EDIC) Research Group. (2009). Modern-day clinical course of type 1 diabetes mellitus after 30 years' duration: the diabetes control and complications trial/epidemiology of diabetes

interventions and complications and Pittsburgh epidemiology of diabetes complications experience (1983-2005). *Archives of internal medicine*, 169(14), **1307**.

354. National Center for Biotechnology Information (NCBI). Bethesda (MD): National Library of Medicine (US), Available from: https://www.ncbi.nlm.nih.gov/
355. Navarro, J. F., Milena, F. J., Mora, C., Leon, C., & Garcia, J. (2006). Renal pro-inflammatory cytokine gene expression in diabetic nephropathy: effect of angiotensin-converting enzyme inhibition and pentoxifylline administration. *American journal of nephrology*, 26(6), **562-570**.
356. Navarro, J. F., Mora, C., Muros, M., & Garcia, J. (2006). Urinary tumour necrosis factor-α excretion independently correlates with clinical markers of glomerular and tubulointerstitial injury in type 2 diabetic patients. *Nephrology Dialysis Transplantation*, 21(12), **3428-3434**.
357. Navarro-Gonzalez, J. F., & Mora-Fernandez, C. (2008). The role of inflammatory cytokines in diabetic nephropathy. *Journal of the American Society of Nephrology*, 19(3), **433-442**.
358. Niessner, A., Steiner, S., Speidl, W. S., Pleiner, J., Seidinger, D., Maurer, G., *et al.* (2006). Simvastatin suppresses endotoxin-induced upregulation of toll-like receptors 4 and 2 in vivo. *Atherosclerosis*, 189(2), **408-413**.
359. NIH Human Microbiome Portfolio Analysis Team lita. proctor@ nih. gov Lita Proctor, Jonathan LoTempio, Aron Marquitz, Phil Daschner, Dan Xi, Roberto Flores, Liliana Brown, Ryan Ranallo, Padma Maruvada, Karen Regan R., Dwayne Lunsford, Michael Reddy, Lis Caler. (2019). A review of 10 years of human microbiome research activities at the US National Institutes of Health, Fiscal Years 2007-2016. *Microbiome*, 7, **1-19**.
360. Ninichuk, V., Khandoga, A. G., Segerer, S., Loetscher, P., Schlapbach, A., Revesz, L., *et al.* (2007). The role of interstitial macrophages in nephropathy of type 2 diabetic db/db mice. *The American journal of pathology*, 170(4), **1267-1276**.
361. Nishi, S., Ueno, M., Hisaki, S., Iino, N., Iguchi, S., Oyama, Y., & Gejyo, F. (2000). Ultrastructural characteristics of diabetic nephropathy. *Medical Electron Microscopy*, 33(2), **65-73.**
362. Nishikawa, T., Edelstein, D., & Brownlee, M. (2000). The missing link: a single unifying mechanism for diabetic complications. *Kidney International*, 58, **S26-S30.**

363. O'neill, L. A., Golenbock, D., & Bowie, A. G. (2013). The history of Toll-like receptors—redefining innate immunity. *Nature Reviews Immunology*, *13*(6), **453-460**.

364. Ooi, L. G., & Liong, M. T. (2010). Cholesterol-lowering effects of probiotics and prebiotics: a review of in vivo and in vitro findings. *International journal of molecular sciences*, 11(6), **2499-2522**.

365. O'Shea, J. J., Gadina, M., & Siegel, R. M. (2013). Cytokines and cytokine receptors. In *Clinical immunology*, fourth ed (pp. 108-135). Content Repository Only.

366. Osterby, R., Gall, M. A., Schmitz, A., Nielsen, F. S., Nyberg, G., & Parving, H. H. (1993). Glomerular structure and function in proteinuric type 2 (non-insulin-dependent) diabetic patients. *Diabetologia*, 36(10), **1064-1070**.

367. Pal, D., Dasgupta, S., Kundu, R., Maitra, S., Das, G., Mukhopadhyay, S. & Bhattacharya, S. (2012). Fetuin-A acts as an endogenous ligand of TLR4 to promote lipid-induced insulin resistance. *Nature medicine*, 18(8), **1279**.

368. Palacios, H, H., B Yendluri, B., Parvathaneni, K., B Shadlinski, V., E Obrenovich, M., Leszek, J., & Aliev, G. (2011). Mitochondrion-specific antioxidants as drug treatments for Alzheimer disease. *CNS & Neurological Disorders-Drug Targets (Formerly Current Drug Targets-CNS & Neurological Disorders)*, 10(2), **149-162**.

369. Panchapakesan, U., & Pollock, C. (2015). The role of dipeptidyl peptidase–4 inhibitors in diabetic kidney disease. *Frontiers in immunology*, 6, **443.**

370. Panchapakesan, U., & Pollock, C. (2018). The role of toll-like receptors in diabetic kidney disease. *Current opinion in nephrology and hypertension*, 27(1), **30-34**.

371. Panneerselvam, Suresh (2016): The history of Toll like receptors. figshare. Dataset. https://doi.org/10.6084/m9.figshare.3180211.v1

372. Papademetriou, V., Lovato, L., Doumas, M., Nylen, E., Mottl, A., Cohen, R. M., *et al.* (2015). Chronic kidney disease and intensive glycemic control increase cardiovascular risk in patients with type 2 diabetes. *Kidney international*, 87(3), **649-659**.

373. Papaspyros, N. S. (1964). The history of diabetes mellitus (Vol. 1964). G. Thieme.

374. Papatheodorou, K., Banach, M., Bekiari, E., Rizzo, M., & Edmonds, M. (2018). Complications of diabetes 2017. *Journal of diabetes research*, 2018.

375. Parameswaran, N., & Patial, S. (2010). Tumor necrosis factor-α signaling in macrophages. *Critical Reviews™ in Eukaryotic Gene Expression*, 20(2), **87-103**.

376. Parekh, P. J., Arusi, E., Vinik, A., & Johnson, D. A. (2014). The role and influence of gut microbiota in pathogenesis and management of obesity and metabolic syndrome. *Frontiers in endocrinology*, 5, **47**.

377. Parving, H. H., Lewis, J. B., Ravid, M., Remuzzi, G., & Hunsicker, L. G. (2006). Prevalence and risk factors for microalbuminuria in a referred cohort of type II diabetic patients: a global perspective. *Kidney international*, 69(11), **2057-2063**.

378. Parving, H. H., Oxenboll, B., Svendsen, P. A., Christiansen, J. S., & Andersen, A. R. (1982). Early detection of patients at risk of developing diabetic nephropathy. A longitudinal study of urinary albumin excretion. *European Journal of Endocrinology*, 100(4), **550-555**.

379. Patel, A., & ADVANCE Collaborative Group. (2007). Effects of a fixed combination of perindopril and indapamide on macrovascular and microvascular outcomes in patients with type 2 diabetes mellitus (the ADVANCE trial): a randomised controlled trial. *The Lancet*, 370(9590), **829-840**.

380. Pegg, D. E. (2015). Principles of cryopreservation. In *Cryopreservation and freeze-drying protocols* (pp. 3-19). Springer, New York, NY.

381. Penno, G., Garofolo, M., & Del Prato, S. (2016). Dipeptidyl peptidase-4 inhibition in chronic kidney disease and potential for protection against diabetes-related renal injury. *Nutrition, Metabolism and Cardiovascular Diseases*, 26(5), **361-373**.

382. Peppa M., Uribarri J., Vlassara H. (2005) Diabetes and Advanced Glycoxidation End-Products. In: Johnstone M.T., Veves A. (eds) *Diabetes and Cardiovascular Disease. Contemporary Cardiology*. Humana Press. pp 47-71.

383. Persson, F., & Rossing, P. (2018). Diagnosis of diabetic kidney disease: state of the art and future perspective. *Kidney international supplements*, 8(1), **2-7**.

384. Pfeffer, K. (2003). Biological functions of tumor necrosis factor cytokines and their receptors. *Cytokine & growth factor reviews*, 14(3-4), **185-191**.

385. Phillips, T. (2008) Small non-coding RNA and gene expression. *Nature Education* 1(1):**115.**

386. Pickup, J. C., Chusney, G. D., Thomas, S. M., & Burt, D. (2000). Plasma interleukin-6, tumour necrosis factor α and blood cytokine production in type 2 diabetes. *Life sciences*, 67(3), **291-300.**

387. Pihoker, C., Gilliam, L. K., Ellard, S., Dabelea, D., Davis, C., Dolan, L. M., & Mayer-Davis, E. (2013). Prevalence, characteristics and clinical diagnosis of maturity onset diabetes of the young due to mutations in HNF1A, HNF4A, and glucokinase: results from the SEARCH for Diabetes in Youth. *The Journal of Clinical Endocrinology & Metabolism*, 98(10), **4055-4062**.

388. Pisetsky, D. S. (2013). Immune activation by histones: Plusses and minuses in inflammation. *European journal of immunology*, 43(12), **3163-3166**.

389. Polonsky, K. S. (2012). The past 200 years in diabetes. *New England Journal of Medicine*, 367(14), **1332-1340**.

390. Provost, P., Dishart, D., Doucet, J., Frendewey, D., Samuelsson, B., & Rådmark, O. (2002). Ribonuclease activity and RNA binding of recombinant human Dicer. *The EMBO journal*, 21(21), **5864-5874**.

391. Pushpanathan, P., Srikanth, P., Seshadri, K. G., Selvarajan, S., Pitani, R. S., Kumar, T. D., & Janarthanan, R. (2016). Gut microbiota in type 2 diabetes individuals and correlation with monocyte chemoattractant protein1 and interferon gamma from patients attending a tertiary care centre in Chennai, India. *Indian journal of endocrinology and metabolism*, 20(4), **523.**

392. Qazi, O., Tamarapu, P., Lockey, R., & Kolliputi, N. (2013). Can microRNAs keep inflammasomes in check?. *Frontiers in genetics*, 4, (30), **1-2**.

393. Qi, C., Mao, X., Zhang, Z., & Wu, H. (2017). Classification and Differential Diagnosis of Diabetic Nephropathy. *Journal of diabetes research*, 2017, **8637138**.

394. Qin, J., Li, Y., Cai, Z., Li, S., Zhu, J., Zhang, F., & Peng, Y. (2012). A metagenome-wide association study of gut microbiota in type 2 diabetes. *Nature*, 490(7418), **55**.

395. Qiu, S., Sun, G., Zhang, Y., Li, X., & Wang, R. (2016). Involvement of the NF-κB signaling pathway in the renoprotective effects of isorhamnetin in a type 2 diabetic rat model. *Biomedical reports*, 4(5), **628-634**.

396. Qiu, Y. Y., & Tang, L. Q. (2016). Roles of the NLRP3 inflammasome in the pathogenesis of diabetic nephropathy. *Pharmacological Research*, 114, **251-264**.

397. Qiu, Z., Lei, S., Zhao, B., Wu, Y., Su, W., Liu, M., & Xia, Z. Y. (2017). NLRP3 inflammasome activation-mediated pyroptosis aggravates myocardial

ischemia/reperfusion injury in diabetic rats. *Oxidative medicine and cellular longevity*, 2017.

398. Quevillon Huberdeau, M., & Simard, M. J. (2019). A guide to micro RNA-mediated gene silencing. *The FEBS Journal*, 286(4), **642-652**.
399. Rajadhyaksha, V. (2018). Managing diabetes patients in India: Is the future more bitter or less sweet? *Perspectives in clinical research*, 9(1), **1**.
400. Reaven, G. M. (2005). Why Syndrome X? From Harold Himsworth to the insulin resistance syndrome. *Cell metabolism*, 1(1), **9-14.**
401. Rena, G., Hardie, D. G., & Pearson, E. R. (2017). The mechanisms of action of metformin. *Diabetologia*, 60(9), **1577-1585.**
402. Retnakaran, R., Cull, C. A., Thorne, K. I., Adler, A. I., & Holman, R. R. (2006). Risk factors for renal dysfunction in type 2 diabetes: UK Prospective Diabetes Study 74. *Diabetes*, 55(6), **1832-1839**.
403. Riffo-Campos, A. L., Riquelme, I., & Brebi-Mieville, P. (2016). Tools for sequence-based miRNA target prediction: what to choose? *International journal of molecular sciences*, 17(12), **1987**.
404. Riteau, N., Gasse, P., Fauconnier, L., Gombault, A., Couegnat, M., Fick, L., *et al.* (2010). Extracellular ATP is a danger signal activating P2X7 receptor in lung inflammation and fibrosis. *American journal of respiratory and critical care medicine*, 182(6), **774-783**.
405. Robin, E. D. (1979). Claude Bernard: pioneer of regulatory biology. *JAMA*, 242(12), **1283-1284**.
406. Roh, J. S., & Sohn, D. H. (2018). Damage-associated molecular patterns in inflammatory diseases. *Immune network*, 18(4) **e27**.
407. Rolles K. (1987) Pancreatic and Islet Cell Transplantation. In: Catto G.R.D. (eds) *Clinical Transplantation. Immunology and Medicine Series*, vol 5. Springer, Dordrecht.
408. 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**.
409. Roy, M. S., Klein, R., O'Colmain, B. J., Klein, B. E., Moss, S. E., & Kempen, J. H. (2004). The Prevalence of Diabetic Retinopathy Among Adult Type1 Diabetic Persons in the United States. *Archives of ophthalmology*, 122(4), **546-551.**

410. Rubio-Cabezas, O., Hattersley, A. T., Njolstad, P. R., Mlynarski, W., Ellard, S., White, N. & Craig, M. E. (2014). The diagnosis and management of monogenic diabetes in children and adolescents. *Pediatric diabetes*, 15(S20), **47-64**.

411. Saisho, Y. (2015). Metformin and inflammation: its potential beyond glucose-lowering effect. *Endocrine, Metabolic & Immune Disorders-Drug Targets (Formerly Current Drug Targets-Immune, Endocrine & Metabolic Disorders)*, 15(3), **196-205**.

412. Sakai, N., & Wada, T. (2015). Revisiting inflammation in diabetic nephropathy: the role of the Nlrp3 inflammasome in glomerular resident cells. *Kidney international*, 87(1), **12-14**.

413. Sanchez-Alcoholado, L., Castellano-Castillo, D., Jordán-Martínez, L., Moreno-Indias, I., Cardila-Cruz, P., Elena, D., *et al*. (2017). Role of gut microbiota on cardio-metabolic parameters and immunity in coronary artery disease patients with and without type-2 diabetes mellitus. *Frontiers in Microbiology*, 8, **1936**.

414. Sanz, Y., Rastmanesh, R., & Agostonic, C. (2013). Understanding the role of gut microbes and probiotics in obesity: how far are we?. *Pharmacological Research*, 69(1), **144-155**.

415. Sayyed, S. G., Ryu, M., Kulkarni, O. P., Schmid, H., Lichtnekert, J., Grüner, S., *et al*. (2011). An orally active chemokine receptor CCR2 antagonist prevents glomerulosclerosis and renal failure in type 2 diabetes. *Kidney international*, 80(1), **68-78**.

416. Schaefer, L. (2014). Complexity of danger: the diverse nature of damage-associated molecular patterns. *Journal of Biological Chemistry*, 289(51), **35237-35245**.

417. Schaum, N., Karkanias, J., Neff, N. F., May, A. P., Quake, S. R., Wyss-Coray, T., *et al*. (2018). Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris: The Tabula Muris Consortium. *Nature*, 562(7727), **367-372**.

418. Scheer, J. M. (2013). Caspase-1. In *Handbook of Proteolytic Enzymes* (pp. 2237-2243). Academic Press.

419. Schickel, R., Boyerinas, B., Park, S. M., & Peter, M. E. (2008). MicroRNAs: key players in the immune system, differentiation, tumorigenesis and cell death. *Oncogene*, 27(45), **5959**.

420. Schippa, S., & Conte, M. (2014). Dysbiotic events in gut microbiota: impact on human health. *Nutrients*, 6(12), **5786-5805**.

421. Schmittgen, T. D., & Livak, K. J. (2008). Analyzing real-time PCR data by the comparative C T method. *Nature protocols*, 3(6), **1101.**

422. Schroder, K., & Tschopp, J. (2010). The inflammasomes. *Cell, 140*(6), **821-832**.

423. Schroder, K., Zhou, R., & Tschopp, J. (2010). The NLRP3 inflammasome: a sensor for metabolic danger? *Science*, 327(5963), **296-300**.

424. Schwartz, M. M., Lewis, E. J., Leonard-Martin, T., Lewis, J. B., & Batlle, D. (1998). Renal pathology patterns in type II diabetes mellitus: relationship with retinopathy. The Collaborative Study Group. *Nephrology, dialysis, transplantation: official publication of the European Dialysis and Transplant Association-European Renal Association*, 13(10), **2547-2552.**

425. Schwiertz, A., Taras, D., Schäfer, K., Beijer, S., Bos, N. A., Donus, C., & Hardt, P. D. (2010). Microbiota and SCFA in lean and overweight healthy subjects. *Obesity*, 18(1), **190-195**.

426. Segerstolpe, A., Palasantza, A., Eliasson, P., Andersson, E. M., Andréasson, A. C., Sun, X., *et al.* (2016). Single-cell transcriptome profiling of human pancreatic islets in health and type 2 diabetes. *Cell metabolism*, 24(4), **593-607**.

427. Sekizuka, K., Tomino, Y., Sei, C., Kurusu, A., Tashiro, K., Yamaguchi, Y.,& Koide, H. (1994). Detection of serum IL-6 in patients with diabetic nephropathy. *Nephron*, 68(2), **284-285**.

428. Serpillon, S., Floyd, B. C., Gupte, R. S., George, S., Kozicky, M., Neito, V., & Gupte, S. A. (2009). Superoxide production by NAD (P) H oxidase and mitochondria is increased in genetically obese and hyperglycemic rat heart and aorta before the development of cardiac dysfunction. The role of glucose-6-phosphate dehydrogenase-derived NADPH. *American Journal of Physiology-Heart and Circulatory Physiology*, 297(1), **H153-H162**.

429. Shah, A., Xia, L., Goldberg, H., Lee, K. W., Quaggin, S. E., & Fantus, I. G. (2013). Thioredoxin-interacting protein mediates high glucose-induced reactive oxygen species generation by mitochondria and the NADPH oxidase, Nox4, in mesangial cells. *Journal of Biological Chemistry*, 288(10), **6835-6848.**

430. Shahzad, K., Bock, F., Dong, W., Wang, H., Kopf, S., Kohli, S., *et al.* (2015). Nlrp3-inflammasome activation in non-myeloid-derived cells aggravates diabetic nephropathy. *Kidney international*, 87(1), **74-84**.

431. Shahzad, K., Bock, F., Gadi, I., Kohli, S., Nazir, S., Ghosh, S., & Isermann, B. (2016). Caspase-1, but not caspase-3, promotes diabetic nephropathy. Journal of the American Society of Nephrology, 27(8), **2270-2275.**

432. Shanahan, F. (2009). Therapeutic implications of manipulating and mining the microbiota. *The Journal of physiology*, 587(17), **4175-4179**.

433. Shanahan, F. (2012). The gut microbiota—a clinical perspective on lessons learned. *Nature reviews Gastroenterology & hepatology*, 9(10), **609**.

434. Sharma, D., & Kanneganti, T. D. (2016). The cell biology of inflammasomes: Mechanisms of inflammasome activation and regulation. *J Cell Biol*, 213(6), **617-629.**

435. Sharma, S., & Tripathi, P. (2019). Gut microbiome and type 2 diabetes: where we are and where to go?. *The Journal of nutritional biochemistry*, 63, **101-108**.

436. Sharma, V., & Sharma, P. L. (2013). Role of different molecular pathways in the development of diabetes-induced nephropathy. *J. Diabetes Metab*. S9, **004**.

437. Shen, S. C., Hung, Y. C., Kung, P. T., Yang, W. H., Wang, Y. H., & Tsai, W. C. (2016). Factors involved in the delay of treatment initiation for cervical cancer patients: a nationwide population-based study. *Medicine*, 95(33).

438. Shi, C., Huang, F., Gu, X., Zhang, M., Wen, J., Wang, X., *et al*. (2016). Adipogenic miRNA and meta-signature miRNAs involved in human adipocyte differentiation and obesity. *Oncotarget*, *7*(26), 40830.

439. Shi, J., Gao, W., & Shao, F. (2017). Pyroptosis: gasdermin-mediated programmed necrotic cell death. *Trends in biochemical sciences*, 42(4), **245-254**.

440. Shiju, T. M., & Pragasam, V. (2012). Lipoprotein Modification: A Hallmark in the Progression of Diabetic Nephropathy. *WebmedCentral NEPHROLOGY*; 3(5):WMC003322.

441. Siezen, R. J., & Kleerebezem, M. (2011). The human gut microbiome: are we our enterotypes?. *Microbial biotechnology*, 4(5), **550-553**.

442. Silver, N., Best, S., Jiang, J., & Thein, S. L. (2006). Selection of housekeeping genes for gene expression studies in human reticulocytes using real-time PCR. *BMC molecular biology*, 7(1), **33.**

443. Simpson, K., Wonnacott, A., Fraser, D. J., & Bowen, T. (2016). MicroRNAs in diabetic nephropathy: from biomarkers to therapy. *Current diabetes reports*, 16(3), **35**.

444. Singh, V. P., Bali, A., Singh, N., & Jaggi, A. S. (2014). Advanced glycation end products and diabetic complications. *The Korean Journal of Physiology & Pharmacology*, 18(1), **1-14**.

445. Skeldon, A. M., Faraj, M., & Saleh, M. (2014). Caspases and inflammasomes in metabolic inflammation. *Immunology and cell biology*, 92(4), **304-313**.

446. Skyler, J. S., Bakris, G. L., Bonifacio, E., Darsow, T., Eckel, R. H., Groop, L., & McElvaine, A. T. (2017). Differentiation of diabetes by pathophysiology, natural history, and prognosis. *Diabetes*, *66*(2), **241-255**.

447. Sochorova, K., Budinsky, V., Rozkova, D., Tobiasova, Z., Dusilova-Sulkova, S., Spisek, R., & Bartunkova, J. (2009). Paricalcitol (19-nor-1, 25-dihydroxyvitamin D2) and calcitriol (1, 25-dihydroxyvitamin D3) exert potent immunomodulatory effects on dendritic cells and inhibit induction of antigen-specific T cells. *Clinical Immunology*, 133(1), **69-77**.

448. Solini, A. (2016). Role of SGLT2 inhibitors in the treatment of type 2 diabetes mellitus. *Acta diabetologica*, 53(6), **863-870**.

449. Staples, A., & Wong, C. (2010). Risk factors for progression of chronic kidney disease. *Current opinion in pediatrics*, 22(2), **161–1**

450. Stehlik, C., Lee, S. H., Dorfleutner, A., Stassinopoulos, A., Sagara, J., & Reed, J. C. (2003). Apoptosis-associated speck-like protein containing a caspase recruitment domain is a regulator of procaspase-1 activation. *The Journal of Immunology*, 171(11), **6154-6163**.

451. Stelzer G, Rosen R, Plaschkes I, Zimmerman S, Twik M, Fishilevich S, *et al.* (2016). The GeneCards Suite: From Gene Data Mining to Disease Genome Sequence Analysis , *Current Protocols in Bioinformatics*,54(1),**1-33**.

452. Stephenson, J. M., Fuller, J. H., & EURODIAB IDDM Complications Study Group. (1994). Microalbuminuria is not rare before 5 years of IDDM. *Journal of Diabetes and its Complications*, 8(3), **166-173**.

453. Stolerman, E. S., & Florez, J. C. (2009). Genomics of type 2 diabetes mellitus: implications for the clinician. *Nature Reviews Endocrinology*, *5*(8), **429-36**.

454. Strober, W. (1997). Trypan blue exclusion test of cell viability. *Current protocols in immunology*, 21(1), **A-3B**.

455. Stutz, A., Kolbe, C. C., Stahl, R., Horvath, G. L., Franklin, B. S., van Ray, O., *et al*. (2017). NLRP3 inflammasome assembly is regulated by phosphorylation of the pyrin domain. *Journal of Experimental Medicine*, 214(6), **1725-1736**.

456. Sun, F., & Xia, L. C. (2015). Accurate Genome Relative Abundance Estimation Based on Shotgun Metagenomic Reads. *Encyclopedia of Metagenomics: Genes, Genomes and Metagenomes: Basics, Methods, Databases and Tools*, 2015, **21-25**.

457. Suresh, R., & Mosser, D. M. (2013). Pattern recognition receptors in innate immunity, host defense, and immunopathology. *Advances in physiology education*, 37(4), **284-290**.

458. Symptoms. Retrieved from http://www.diabetes.org/diabetes-basics/symptoms.

459. Ta, N. N., Li, Y., Schuyler, C. A., Lopes-Virella, M. F., & Huang, Y. (2010). DPP-4 (CD26) inhibitor alogliptin inhibits TLR4-mediated ERK activation and ERK-dependent MMP-1 expression by U937 histiocytes. *Atherosclerosis*, 213(2), **429-435**.

460. Tahamtan, A., Teymoori-Rad, M., Nakstad, B., & Salimi, V. (2018). Anti-inflammatory MicroRNAs and their potential for inflammatory diseases treatment. *Frontiers in immunology*, 9, **1377**.

461. Takeuchi, M., Rothe, M., & Goeddel, D. V. (1996). Anatomy of TRAF2 distinct domains for nuclear factor-κB activation and association with tumor necrosis factor signaling proteins. *Journal of Biological Chemistry*, 271(33), **19935-19942**.

462. Takeuchi, O., & Akira, S. (2010). Pattern recognition receptors and inflammation. *Cell*, 140(6), **805-820**.

463. Tandon, N., Anjana, R. M., Mohan, V., Kaur, T., Afshin, A., Ong, K., & Mathur, P. (2018). The increasing burden of diabetes and variations among the states of India: the Global Burden of Disease Study 1990–2016. *The Lancet Global health*, 6(12), **e1352-e1362**.

464. Taylor, S., Wakem, M., Dijkman, G., Alsarraj, M., & Nguyen, M. (2010). A practical approach to RT-qPCR—publishing data that conform to the MIQE guidelines. *Methods*, 50(4), **S1-S5**.

465. Teng, B., Duong, M., Tossidou, I., Yu, X., & Schiffer, M. (2014). Role of protein kinase C in podocytes and development of glomerular damage in diabetic nephropathy. *Frontiers in endocrinology*, 5, 179.

466. Tepper, O. M., Galiano, R. D., Capla, J. M., Kalka, C., Gagne, P. J., Jacobowitz, G. R., & Gurtner, G. C. (2002). Human endothelial progenitor cells from type II diabetics exhibit impaired proliferation, adhesion, and incorporation into vascular structures. *Circulation*, 106(22), 2781-2786.

467. Tervaert, T. W. C., Mooyaart, A. L., Amann, K., Cohen, A. H., Cook, H. T., Drachenberg, C. B. & Joh, K. (2010). Pathologic classification of diabetic nephropathy. *Journal of the American Society of Nephrology*, 21(4), **556-563**.

468. Tesch G. H. (2017). Diabetic nephropathy–is this an immune disorder? *Clinical Science*;131(16):**2183-99**.

469. Testa, R., Bonfigli, A. R., Prattichizzo, F., La Sala, L., De Nigris, V., & Ceriello, A. (2017). The "metabolic memory" theory and the early treatment of hyperglycemia in prevention of diabetic complications. *Nutrients*, 9(5), 437.

470. The R Foundation for Statistical Computing R version 3.2.3. "Wooden Christmas-Tree". Copyright (C) 2015; (2015-12-10)

471. The Toll-like Receptor Family, R&D Systems.

472. Thermann, R., & Hentze, M. W. (2007). Drosophila miR2 induces pseudo-polysomes and inhibits translation initiation. *Nature*, 447(7146), **875**.

473. Ting, J. P. Y., Lovering, R. C., Alnemri, E. S., Bertin, J., Boss, J. M., Davis, B. K., & Hoffman, H. M. (2008). The NLR gene family: a standard nomenclature. *Immunity*, 28(3), **285-287**.

474. Tipton MC. (2008). Susruta of India, an unrecognized contributor to the history of exercise physiology. *J Appl Physiol*, 108:**1553–6**

475. Toll like Receptors, Available from: https://microbionotes.com/toll-like-receptors/

476. Tomari, Y., & Zamore, P. D. (2005). Perspective: machines for RNAi. *Genes & development*, 19(5), **517-529**.

477. Tonna, S., El-Osta, A., Cooper, M. E., & Tikellis, C. (2010). Metabolic memory and diabetic nephropathy: potential role for epigenetic mechanisms. *Nature Reviews Nephrology*, 6(6), 332-341.

478. Tonna, S., El-Osta, A., Cooper, M. E., & Tikellis, C. (2010). Metabolic memory and diabetic nephropathy: potential role for epigenetic mechanisms. *Nature Reviews Nephrology*, 6(6), **332-341**.

479. Toth-Manikowski, S., & Atta, M. G. (2015). Diabetic kidney disease: pathophysiology and therapeutic targets. *Journal of diabetes research*, 2015, 697010.

480. Tran, T. H., & Montano, M. A. (2017). MicroRNAs: Mirrors of Health and Disease. In *Translating MicroRNAs to the Clinic* (pp. 1-15). Academic Press.

481. Tschopp, J., & Schroder, K. (2010). NLRP3 inflammasome activation: The convergence of multiple signalling pathways on ROS production?. *Nature reviews immunology*, 10(3), **210-215**.

482. Tsutsumi, N., Kimura, T., Arita, K., Ariyoshi, M., Ohnishi, H., Yamamoto, T., *et al.* (2014). The structural basis for receptor recognition of human interleukin-18. *Nature communications*, 5, **5340**.

483. Turchinovich, A., Weiz, L., Langheinz, A., & Burwinkel, B. (2011). Characterization of extracellular circulating microRNA. *Nucleic acids research*, 39(16), **7223-7233**.

484. UCSC Genome Browser: Kent WJ, Sugnet CW, Furey TS, Roskin KM, Pringle TH, Zahler AM, Haussler D. The human genome browser at UCSC. *Genome Res.* 2002 Jun;12(6):**996-1006**.

485. Uematsu, S., & Akira, S. (2008). Toll-Like receptors (TLRs) and their ligands. In *Toll-like receptors (TLRs) and innate immunity* (pp. 1-20). Springer, Berlin, Heidelberg.

486. UK Prospective Diabetes Study (UKPDS) Group. (1998). Effect of intensive blood-glucose control with metformin on complications in overweight patients with type 2 diabetes (UKPDS 34). *The Lancet*, 352(9131), **854-865**.

487. UK Prospective Diabetes Study Group. (1998). Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. *BMJ: British Medical Journal*, 317(7160), **703**.

488. Ulbing, M., Kirsch, A. H., Leber, B., Lemesch, S., Münzker, J., Schweighofer, N., *et al.* (2017). MicroRNAs 223-3p and 93-5p in patients with chronic kidney disease before and after renal transplantation. *Bone*, 95, **115-123**.

489. Unnikrishnan, R., Rema, M., Pradeepa, R., Deepa, M., Shanthirani, C. S., Deepa, R., & Mohan, V. (2007). Prevalence and risk factors of diabetic nephropathy in an urban South Indian population: the Chennai Urban Rural Epidemiology Study (CURES 45). *Diabetes care*, 30(8), **2019-2024**.

490. Upadhyaya, S., & Banerjee, G. (2015). Type 2 diabetes and gut microbiome: at the intersection of known and unknown. *Gut Microbes*, 6(2), **85-92**.

491. Van Den Elsen, L. W., Poyntz, H. C., Weyrich, L. S., Young, W., & Forbes-Blom, E. E. (2017). Embracing the gut microbiota: the new frontier for inflammatory and infectious diseases. *Clinical & translational immunology*, 6(1), **e125**.

492. van Rooij, E., Purcell, A. L., & Levin, A. A. (2012). Developing microRNA therapeutics. *Circulation research*, 110(3), **496-507**.

493. Varughese, S. & Abraham, G. (2018). Chronic kidney disease in India: A clarion call for change. *Clinical Journal of the American Society of Nephrology*, 13(5), 802-804.

494. Vento-Tormo, R., Efremova, M., Botting, R. A., Turco, M. Y., Vento-Tormo, M., Meyer, K. B., *et al.* (2018). Reconstructing the human first trimester fetal-maternal interface using single cell transcriptomics. *bioRxiv*, **429589**.

495. Verzola, D., Cappuccino, L., D'amato, E., Villaggio, B., Gianiorio, F., Mij, M., *et al.* (2014). Enhanced glomerular Toll-like receptor 4 expression and signaling in patients with type 2 diabetic nephropathy and microalbuminuria. *Kidney international*, 86(6), **1229-1243**.

496. Vesey, D. A., Cheung, C., Cuttle, L., Endre, Z., Gobe, G., & Johnson, D. W. (2002). Interleukin-1β stimulates human renal fibroblast proliferation and matrix protein production by means of a transforming growth factor-β-dependent mechanism. *Journal of Laboratory and Clinical Medicine*, 140(5), **342-350**.

497. Viberti, G. C., Jarrett, R. J., Mahmud, U., Hill, R. D., Argyropoulos, A., & Keen, H. (1982). Microalbuminuria as a predictor of clinical nephropathy in insulin-dependent diabetes mellitus. *The Lancet*, 319(8287), **1430-1432**.

498. Vijayan, M., Radhakrishnan, S., Abraham, G., Mathew, M., Sampathkumar, K., & Mancha, N. P. (2016). Diabetic kidney disease patients on hemodialysis: a retrospective survival analysis across different socioeconomic groups. *NDT Plus*, 9(6), 833-838.

499. Vijay-Kumar, M., Aitken, J. D., Carvalho, F. A., Cullender, T. C., Mwangi, S., Srinivasan, S., *et al.* (2010). Metabolic syndrome and altered gut microbiota in mice lacking Toll-like receptor 5. *Science*, 328(5975), **228-231**.

500. Vilaysane, A., Chun, J., Seamone, M. E., Wang, W., Chin, R., Hirota, S., *et al.* (2010). The NLRP3 inflammasome promotes renal inflammation and contributes to CKD. *Journal of the American Society of Nephrology*, 21(10), **1732-1744**.

501. Viswanathan V, Tilak P, Kumpatla S. (2012). Risk factors associated with the development of overt nephropathy in type 2 diabetes patients: A 12 years observational study. *Indian J Med Res*; 136:**46–53**.

502. Voorhoeve, P. M. (2010). MicroRNAs: Oncogenes, tumor suppressors or master regulators of cancer heterogeneity?. *Biochimica et Biophysica Acta (BBA)-Reviews on Cancer*, 1805(1), **72-86**.

503. Voskarides K., Felekkis K. (2015) MiRNAs' Function and Role in Evolution: Under the View of Genomic Enhancement Phenomena. In: Felekkis K., Voskarides K. (eds) *Genomic Elements in Health, Disease and Evolution*. Springer, New York, NY

504. Wada, J., & Makino, H. (2016). Innate immunity in diabetes and diabetic nephropathy. *Nature Reviews Nephrology*, 12(1), **13-26**.

505. Wagner, E. M. (2013). Monitoring gene expression: quantitative real-time rt-PCR. In Lipoproteins and Cardiovascular Disease (pp. 19-45). Humana Press, Totowa, NJ.

506. Wahid, F., Shehzad, A., Khan, T., & Kim, Y. Y. (2010). MicroRNAs: synthesis, mechanism, function, and recent clinical trials. *Biochimica et Biophysica Acta (BBA)-Molecular Cell Research*, 1803(11), **1231-1243**.

507. Wakiyama, M., Takimoto, K., Ohara, O., & Yokoyama, S. (2007). Let-7 microRNA-mediated mRNA deadenylation and translational repression in a mammalian cell-free system. *Genes & development*, 21(15), **1857-1862**.

508. Walayat, A., Yang, M., & Xiao, D. (2018). Therapeutic Implication of miRNA in Human Disease. In *Antisense Therapy*. IntechOpen.

509. Wang, L. P., Gao, Y. Z., Song, B., Yu, G., Chen, H., Zhang, Z. W., *et al*. (2019). MicroRNAs in the Progress of Diabetic Nephropathy: A Systematic Review and Meta-Analysis. *Evidence-Based Complementary and Alternative Medicine*, 2019.

510. Wang, S., Li, Y., Fan, J., Zhang, X., Luan, J., Bian, Q., *et al*. (2017). Interleukin-22 ameliorated renal injury and fibrosis in diabetic nephropathy through inhibition of NLRP3 inflammasome activation. *Cell death & disease*, 8(7), **e2937**.

511. Wang, T., Cai, G., Qiu, Y., Fei, N., Zhang, M., Pang, X., *et al.* (2012). Structural segregation of gut microbiota between colorectal cancer patients and healthy volunteers. *The ISME journal*, 6(2), **320**.

512. Wang, X., Bao, W., Liu, J., OuYang, Y. Y., Wang, D., Rong, S. & Liu, L. G. (2013). Inflammatory markers and risk of type 2 diabetes: a systematic review and meta-analysis. *Diabetes care*, 36(1), **166-175**.

513. Wang, Y., Juranek, S., Li, H., Sheng, G., Tuschl, T., & Patel, D. J. (2008). Structure of an argonaute silencing complex with a seed-containing guide DNA and target RNA duplex. *nature*, 456(7224), **921-926**.

514. Wang, Y., Ning, X., Gao, P., Wu, S., Sha, M., Lv, M., *et al.* (2017). Inflammasome activation triggers caspase-1-mediated cleavage of cGAS to regulate responses to DNA virus infection. *Immunity*, 46(3), **393-404**.

515. Wang, Y., Pang, Q. J., Liu, J. T., Wu, H. H., & Tao, D. Y. (2018). Down-regulated miR-448 relieves spinal cord ischemia/reperfusion injury by up-regulating SIRT1. *Brazilian Journal of Medical and Biological Research*, 51(5).

516. Weber, J. A., Baxter, D. H., Zhang, S., Huang, D. Y., Huang, K. H., Lee, M. J., *et al*. (2010). The microRNA spectrum in 12 body fluids. *Clinical chemistry*, 56(11), **1733-1741**.

517. Wei, H., Wang, D., Qian, Y., Liu, X., Fan, S., Yin, H. S., & Wang, X. (2014). Structural basis for the specific recognition of IL-18 by its alpha receptor. *FEBS letters*, 588(21), **3838-3843**.

518. What are Cytokines, Sino Biological. Available from: https://www.sinobiological.com/what-is-cytokine-cytokine-definition-a-5796.html

519. Wheeler, D. L., Barrett, T., Benson, D. A., Bryant, S. H., Canese, K., Chetvernin, V.,*et al.* (2007). Database resources of the national center for biotechnology information. *Nucleic acids research*, *36*(suppl_1), **D13-D21**.

520. White, K. E., & Bilous, R. W. (2000). Type 2 diabetic patients with nephropathy show structural—functional relationships that are similar to type 1 disease. *Journal of the American Society of Nephrology*, 11(9), **1667-1673**.

521. Wilczynska, A., & Bushell, M. (2015). The complexity of miRNA-mediated repression. *Cell death and differentiation*, 22(1), **22**.

522. Wilson, P. C., Wu, H., Kirita, Y., Uchimura, K., Ledru, N., Rennke, H. G., *et al.* (2019). The single-cell transcriptomic landscape of early human diabetic nephropathy. *Proceedings of the National Academy of Sciences*, 116(39), **19619-19625**.

523. Winter, J., Jung, S., Keller, S., Gregory, R. I., & Diederichs, S. (2009). Many roads to maturity: microRNA biogenesis pathways and their regulation. *Nature cell biology*, 11(3), **228.**

524. 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**.

525. Wu, G. D., Chen, J., Hoffmann, C., Bittinger, K., Chen, Y. Y., Keilbaugh, S. A., *et al.* (2011). Linking long-term dietary patterns with gut microbial enterotypes. *Science*, 334(6052), **105-108**.

526. Wu, H., Kong, L., Zhou, S., Cui, W., Xu, F., Luo, M., & Miao, L. (2014). The role of microRNAs in diabetic nephropathy. *Journal of diabetes research*, 2014.

527. Wu, S., Huang, S., Ding, J., Zhao, Y., Liang, L., Liu, T., *et al*. (2010). Multiple microRNAs modulate p21Cip1/Waf1 expression by directly targeting its 3′ untranslated region. *Oncogene*, 29(15), **2302-8**.

528. Xiao, C., & Rajewsky, K. (2009). MicroRNA control in the immune system: basic principles. *Cell*, 136(1), **26-36**.

529. Xiao, J., Li, J., Cai, L., Chakrabarti, S., & Li, X. (2014). Cytokines and diabetes research. *Journal of diabetes research*, 2014.

530. Xiong, J., Wang, Y., Shao, N., Gao, P., Tang, H., Su, H., *et al.* (2015). The expression and significance of NLRP3 inflammasome in patients with primary glomerular diseases. *Kidney and Blood Pressure Research*, 40(4), **344-354**.

531. Yamamoto, M., & Takeda, K. (2010). Current views of toll-like receptor signaling pathways. *Gastroenterology research and practice*, 2010, 240365.

532. Yamasaki, K., Muto, J., Taylor, K. R., Cogen, A. L., Audish, D., Bertin, J., *et al.* (2009). NLRP3/cryopyrin is necessary for interleukin-1β (IL-1β) release in response to hyaluronan, an endogenous trigger of inflammation in response to injury. *Journal of Biological Chemistry*, 284(19), **12762-12771**.

533. Yan, S. F., Ramasamy, R., & Schmidt, A. M. (2010). The RAGE axis: a fundamental mechanism signaling danger to the vulnerable vasculature. *Circulation research*, 106(5), **842-853**.

534. Yaribeygi, H., Katsiki, N., Butler, A. E., & Sahebkar, A. (2019). Effects of antidiabetic drugs on NLRP3 inflammasome activity, with a focus on diabetic kidneys. *Drug discovery today*, 24(1), **256-262**.

535. Yayi, H., Yeda, X., Huaxin, W., Yang, W., Qian, S., & Zhongyuan, X. (2016). Toll-like receptor 7 involves the injury in acute kidney ischemia/reperfusion of STZ-induced diabetic rats. *Acta cirurgica brasileira*, 31(7), **448-455**.

536. Yu, M., Liang, W., Xie, Y., Long, Q., Cheng, X., Liao, Y. H., & Yuan, J. (2016). Circulating miR-185 might be a novel biomarker for clinical outcome in patients with dilated cardiomyopathy. *Scientific reports*, 6, **33580**.

537. Z. Alam., M., Alam, Q., A Kamal, M., M Abuzenadah, A., & Haque, A. (2014). A possible link of gut microbiota alteration in type 2 diabetes and Alzheimer's disease pathogenicity: an update. *CNS & Neurological Disorders-Drug Targets (Formerly Current Drug Targets-CNS & Neurological Disorders)*, 13(3), **383-390**.

538. Zammit, A. R., Katz, M. J., Derby, C., Bitzer, M., & Lipton, R. B. (2015). Chronic kidney disease in non-diabetic older adults: associated roles of the metabolic syndrome, inflammation, and insulin resistance. *PloS one*, 10(10), **e0139369**.

539. Zaremba, J., & Losy, J. (2003). Interleukin-18 in acute ischaemic stroke patients. *Neurological Sciences*, 24(3), **117-124**.

540. Zeng, Y. (2006). Principles of micro-RNA production and maturation. *Oncogene*, 25(46), **6156**.

541. Zeng, Y., Yi, R., & Cullen, B. R. (2005). Recognition and cleavage of primary microRNA precursors by the nuclear processing enzyme Drosha. *The EMBO journal*, 24(1)**, 138-148.**

542. Zeni, L., Norden, A. G., Cancarini, G., & Unwin, R. J. (2017). A more tubulocentric view of diabetic kidney disease. *Journal of nephrology*, 30(6), **701-717**.

543. Zhang, B., Ramesh, G., Uematsu, S., Akira, S., & Reeves, W. B. (2008). TLR4 signaling mediates inflammation and tissue injury in nephrotoxicity. *Journal of the American Society of Nephrology*, 19(5), **923-932**.

544. Zhang, J. M., & An, J. (2007). Cytokines, inflammation and pain. *International anesthesiology clinics*, *45*(2), **27-37**.

545. Zhang, X., Dai, J., Li, L., Chen, H., & Chai, Y. (2017). NLRP3 inflammasome expression and signaling in human diabetic wounds and in high glucose induced macrophages. *Journal of diabetes research*, *2017*.

546. Zhang, Y., Sun, X., Icli, B., & Feinberg, M. W. (2017). Emerging roles for microRNAs in diabetic microvascular disease: novel targets for therapy. *Endocrinology Reviews*, 38(2), **145-168**.

547. Zhang, Y., Wang, L., Zhang, J., Li, Y., He, Q., Li, H., *et al*. (2014). Probiotic Lactobacillus casei Zhang ameliorates high-fructose-induced impaired glucose tolerance in hyperinsulinemia rats. *European journal of nutrition*, 53(1), **221-232**.

548. Zhao, Q., Wang, X., Hu, Q., Zhang, R., & Yin, Y. (2019). Suppression of TLR 4 by miR-448 is involved in Diabetic development via regulating Macrophage polarization. *Journal of Pharmacy and Pharmacology*, 71(5), **806-815**.

549. Zheng, Y., Ley, S. H., & Hu, F. B. (2018). Global aetiology and epidemiology of type 2 diabetes mellitus and its complications. *Nature Reviews Endocrinology*, 14(2), **88**.

550. Zheng, Z., & Zheng, F. (2016). Immune cells and inflammation in diabetic nephropathy. *Journal of diabetes research*, 2016.

551. Zhou, Q., Li, M., Wang, X., Li, Q., Wang, T., Zhu, Q., *et al*. (2012). Immune-related microRNAs are abundant in breast milk exosomes. *International journal of biological sciences*, 8(1), **118-123**.

552. Zhou, R., Tardivel, A., Thorens, B., Choi, I., & Tschopp, J. (2010). Thioredoxin-interacting protein links oxidative stress to inflammasome activation. *Nature immunology*, 11(2), **136-140**.

553. Zhou, Z., Zeng, C., Nie, L., Huang, S., Guo, C., Xiao, D., *et al.* (2017). The effects of TLR3, TRIF and TRAF3 SNPs and interactions with environmental factors on type 2 diabetes mellitus and vascular complications in a Han Chinese population. *Gene*, 626, **41-47**.

554. Zhuang, Y., Ding, G., Zhao, M., Bai, M., Yang, L., Ni, J., *et al.* (2014). NLRP3 inflammasome mediates albumin-induced renal tubular injury through impaired mitochondrial function. *Journal of Biological Chemistry*, 289(36), **25101-25111**.