

DAFTAR PUSTAKA

- A Lowery, C Lemetre, G.B. and M.K., 2011. MicroArray Technology - Expression Profiling of MRNA and MicroRNA in Breast Cancer, in: IntechOpen. p. 13. doi:<http://dx.doi.org/10.5772/57353>
- Ameling, S., Kacprowski, T., Chilukoti, R.K., Malsch, C., Liebscher, V., Suhre, K., et al., 2015. Associations of circulating plasma microRNAs with age, body mass index and sex in a population-based study. *BMC Med. Genomics* 8: 1–9. doi:[10.1186/s12920-015-0136-7](https://doi.org/10.1186/s12920-015-0136-7)
- Ananta, A., Arifin, E.N., Bakhtiar, 2005. Ethnicity and Ageing in Indonesia, 2000–2050. *Asian Popul. Stud.* 1: 227–243. doi:[10.1080/17441730500317477](https://doi.org/10.1080/17441730500317477)
- Arroyo, J.D., Chevillet, J.R., Kroh, E.M., Ruf, I.K., Pritchard, C.C., Gibson, D.F., 2011. Argonaute2 complexes carry a population of circulating microRNAs independent of vesicles in human plasma. *PNAS* 108: 5003–5008. doi:[10.1073/pnas.1019055108](https://doi.org/10.1073/pnas.1019055108)
- Assaf Hanan, Adly Mohamed A, Hu.M.R., 2010. Aging and Intrinsic Aging: Pathogenesis and Manifestations, in: Farage M.A., W., Kenneth Miller, Maibach Howard I. (Eds.), *Textbook of Aging Skin*. Springer-Verlag Berlin Heidelberg, pp. 129–138.
- Becker, C., Hammerle-Fickinger, A., Riedmaier, I., Pfaffl, M.W., 2010. mRNA and microRNA quality control for RT-qPCR analysis. *Methods* 50: 237–243. doi:[10.1016/j.ymeth.2010.01.010](https://doi.org/10.1016/j.ymeth.2010.01.010)
- Benes, V., Castoldi, M., 2010. Expression profiling of microRNA using real-time quantitative PCR , how to use it and what is available. *Methods* 50: 244–249. doi:[10.1016/j.ymeth.2010.01.026](https://doi.org/10.1016/j.ymeth.2010.01.026)
- Bhavsar, S., Løkke, C., Flægstad, T., Einvik, C., 2018. Hsa-miR-376c-3p targets cyclin D1 and induces G1-cell cycle arrest in neuroblastoma cells. *Oncol. Lett.* 16: 6786–6794. doi:[10.3892/ol.2018.9431](https://doi.org/10.3892/ol.2018.9431)
- Brown, T.A., 2007. Genomes, Transcriptomes, and Proteomes, in: *Genomes 3*. Garland Science Publishing, New York, pp. 190–198. doi:[10.1016/B978-0-12-374727-3.00024-3](https://doi.org/10.1016/B978-0-12-374727-3.00024-3)
- Buckingham, E.M., Klingelhutz, A.J., 2011. The role of telomeres in the ageing of human skin. *Exp Dermatol* 20: 297–302. doi:[10.1111/j.1600-0625.2010.01242.x](https://doi.org/10.1111/j.1600-0625.2010.01242.x).The
- Castoldi, M., Schmidt, S., Benes, V., Hentze, M.W., Muckenthaler, M.U., 2008. miChip: An array-based method for microRNA expression profiling using locked nucleic acid capture probes. *Nat. Protoc.* 3: 321–329. doi:[10.1038/nprot.2008.4](https://doi.org/10.1038/nprot.2008.4)
- Chang, H.C., Guarente, L., 2014. SIRT1 and other sirtuins in metabolism. *Trends Endocrinol. Metab.* 25: 138–145. doi:[10.1016/j.tem.2013.12.001](https://doi.org/10.1016/j.tem.2013.12.001)
- Chen, C., Tan, R., Wong, L., Fekete, R., Halsey, J., 2011. Quantitative of MicroRNA by Real-Time RT-PCR, in: Park, D.J. (Ed.), *PCR Protocols*,

Methods in Molecular Biology. Springer Science+ Business Media, pp. 113–133. doi:10.1007/978-1-60761-944-4

Chen, X., Liang, H., Zhang, J., Zen, K., Zhang, C.Y., 2012. Secreted microRNAs: A new form of intercellular communication. *Trends Cell Biol.* 22: 125–132. doi:10.1016/j.tcb.2011.12.001

Childs, B.G., Durik, M., Baker, D.J., Deursen, J.M. Van, 2015. Cellular senescence in aging and age-related disease : from mechanisms to therapy. *Nat Med* 21: 1424–1435. doi:10.1038/nm.4000

Chou, C.H., Shrestha, S., Yang, C.D., Chang, N.W., Lin, Y.L., Liao, K.W., et al., 2018. MiRTarBase update 2018: A resource for experimentally validated microRNA-target interactions. *Nucleic Acids Res.* 46: D296–D302. doi:10.1093/nar/gkx1067

Colin C. Pritchard, Brent Wood, Jason D. Arroyo, Katy J. Dougherty, Melanie M. Miyaji, Jonathan F. Tait, and M.T., 2012. Blood cell origin of circulating microRNAs: a cautionary note for cancer biomarker studies. *Cancer Prev Res* 5: 492–497. doi:10.1038/mp.2011.182.doi

Corsten, M.F., Dennert, R., Jochems, S., Kuznetsova, T., Devaux, Y., Hofstra, L., et al., 2010. Circulating MicroRNA-208b and MicroRNA-499 Reflect Myocardial Damage in Cardiovascular Disease. *Circ Cardiovasc Genet* 3: 499–506. doi:10.1161/CIRCGENETICS.110.957415

Damaraju, S., Stretch, C., Ghosh, S., Baracos, V., Greiner, R., Narasimhan, A., et al., 2017. Small RNAome profiling from human skeletal muscle: novel miRNAs and their targets associated with cancer cachexia. *J. Cachexia. Sarcopenia Muscle* 8: 405–416. doi:10.1002/jcsm.12168

Darlenski, R., Kazandjieva, J., Tsankov, N., Hospital-sofia, T., 2011. Skin barrier function: morphological basis and regulatory mechanisms. *J Clin Med* 4: 36–45.

De Guire, V., Robitaille, R., Tétreault, N., Guérin, R., Ménard, C., Bambace, N., et al., 2013. Circulating miRNAs as sensitive and specific biomarkers for the diagnosis and monitoring of human diseases: Promises and challenges. *Clin. Biochem.* 46: 846–860. doi:10.1016/j.clinbiochem.2013.03.015

Desvignes, T., Batzel, P., Berezikov, E., Eilbeck, K., Eppig, J.T., Mcandrews, M.S., et al., 2015. miRNA Nomenclature : A View Incorporating Genetic Origins , Biosynthetic Pathways , and Sequence Variants. *Trends Genet.* xx: 1–14. doi:10.1016/j.tig.2015.09.002

Elsharawy, A., Keller, A., Flachsbar, F., Wendschlag, A., Jacobs, G., Kefer, N., et al., 2012. Genome-wide miRNA signatures of human longevity. *Aging Cell* 11: 607–616. doi:10.1111/j.1474-9726.2012.00824.x

Exiqon, 2014. miRCURY™ RNA Isolation Kit 1–44.

Fiedler, S.D., Carletti, M.Z., Christenson, L.K., 2010. Quantitative RT-PCR Methods for Mature microRNA Expression Analysis, in: RT-PCR Protocols, Methods in Molecular Biology. Springer Science+Business Media, pp. 49–64. doi:10.1007/978-1-60761-629-0

- Formosa, A., Markert, E.K., Lena, A.M., Italiano, D., Finazzi-Agro', E., Levine, A.J., et al., 2013. MicroRNAs, miR-154, miR-299-5p, miR-376a, miR-376c, miR-377, miR-381, miR-487b, miR-485-3p, miR-495 and miR-654-3p, mapped to the 14q32.31 locus, regulate proliferation, apoptosis, migration and invasion in metastatic prostate cancer cells. *Oncogene* 33: 5173–5182. doi:10.1038/onc.2013.451
- Ganceviciene, R., Liakou, A.I., Theodoridis, A., Makrantonaki, E., Zouboulis, C.C., 2012. Skin anti-aging strategies. *Dermatoendocrinol.* 4: 308–319.
- Gene Structure and Evolution [WWW Document], 2003. URL <http://nitro.biosci.arizona.edu/courses/EEB600A-2003/lectures/lecture24/lecture24.html> (accessed 1.19.17).
- Glass, D., Viñuela, A., Davies, M.N., Ramasamy, A., Parts, L., Knowles, D., et al., 2013. Gene expression changes with age in skin, adipose tissue, blood and brain. *Genome Biol.* 14: R75. doi:10.1186/gb-2013-14-7-r75
- Gombar, S., Jung, H.J., Dong, F., Calder, B., Atzmon, G., Barzilai, N., et al., 2012. Comprehensive microRNA profiling in B-cells of human centenarians by massively parallel sequencing. *BMC Genomics* 13: 1. doi:10.1186/1471-2164-13-353
- Gonzalo, S., 2010. Epigenetic alterations in aging. *J Appl Physiol* 109: 586–597. doi:10.1152/jappphysiol.00238.2010
- Gordon, L.B., Cao, K., Collins, F.S., 2012. Progeria : Translational insights from cell biology. *J Cell Biol* 199: 9–13. doi:10.1083/jcb.201207072
- Graggiani, A., Cornick, S. Mac, Chominski, V., Ribeiro de Noronha, S.M., Alves Corrêa de Noronha, S.A., Ferreira, L.M., 2014. Review of Major Theories of Skin Aging. *Adv. Aging Res.* 03: 265–284. doi:10.4236/aar.2014.34036
- Gu, Z., Eils, R., Schlesner, M., 2016. Complex heatmaps reveal patterns and correlations in multidimensional genomic data. *Bioinformatics* 32: 2847–2849. doi:10.1093/bioinformatics/btw313
- Gunaratne, P.H., Coarfa, C., Soibam, B., Tandon, A., 2012. Next-Generation MicroRNA Expression Profiling Technology, in: *Methods in Molecular Biology*. © Springer Science+Business Media, LLC, pp. 273–288. doi:10.1007/978-1-61779-427-8
- H Zollner, A Stephan, A.M., 2014. Quantitative RT-PCR specific for precursor and mature miRNAs, in: *Methods in Molecular Biology. MiRNA Maturation: Methods and Protocols*. Springer Science+Business Media New, New York, USA, pp. 1–16. doi:10.1007/978-1-62703-703-7
- Hanke, M., Hoefig, K., Merz, H., Feller, A.C., Kausch, I., Jocham, D., et al., 2010. A robust methodology to study urine microRNA as tumor marker: MicroRNA-126 and microRNA-182 are related to urinary bladder cancer. *Urol. Oncol. Semin. Orig. Investig.* 28: 655–661. doi:10.1016/j.urolonc.2009.01.027
- Harries, L.W., 2014. MicroRNAs as Mediators of the Ageing Process 656–670. doi:10.3390/genes5030656

- Hooten, N.N., Fitzpatrick, M., Wood, W.H., De, S., Ejiogu, N., Zhang, Y., et al., 2013. Age - related changes in microRNA levels in serum. *Aging (Albany, NY)*. 5: 725–740.
- Huan, T., Chen, G., Liu, C., Bhattacharya, A., Rong, J., Chen, B.H., et al., 2018. Age-associated microRNA expression in human peripheral blood is associated with all-cause mortality and age-related traits. *Aging Cell* 17: 1–10. doi:10.1111/ace.12687
- Ika Maylasari I, Sulistyowati R, Ramadani K D, A.L., 2018. Statistik Penduduk Lanjut Usia 2017. doi:04220.1801
- Illumina, 2014. An introduction to Next-Generation Sequencing Technology. *Illumina Seq. Introd.* doi:http://www.illumina.com/content/dam/illumina-marketing/documents/products/illumina_sequencing_introduction.pdf
- Jacobs, L.C., 2015. Genetic Determinants of Skin Color , Aging , and Cancer.
- Kanherkar, R.R., Bhatia-dey, N., Csoka, A.B., 2014. Epigenetics across the human lifespan. *Front. Cell Dev. Biol.* 2: 1–19. doi:10.3389/fcell.2014.00049
- Kementerian Kesehatan, R.I.K., 2013. PROFIL KESEHATAN INDONESIA TAHUN 2013. Kementrian Kesehatan Republik Indonesia, Jakarta.
- Khavkin, J., Ellis, D.A.F., 2011. Aging Skin: Histology, Physiology, and Pathology, in: Facial Plastic Surgery Clinics of North America. Elsevier Ltd, pp. 229–234. doi:10.1016/j.fsc.2011.04.003
- Komite Nasional Perumusan Visi dan Agenda Pembangunan Pasca MDG Tahun 2015, 2013. Kesehatan Global dan Agenda Pembangunan Pasca-2015.
- Kosaka, N., Izumi, H., Sekine, K., Ochiya, T., 2015. microRNA as a new immune-regulatory agent in breast milk Extraction of RNAs and expression analysis Existence of microvesicles 3–7. doi:10.1186/1758-907X-1-7
- Koshiol, J., Wang, E., Zhao, Y., Marincola, F., Landi, M.T., 2010. Strengths and limitations of laboratory procedures for microRNA detection. *Cancer Epidemiol. Biomarkers Prev.* 19: 907–911. doi:10.1158/1055-9965.EPI-10-0071
- Kroh, E. M., Parkin R.K, Mitchell P S., T.M., 2010. Analysis of circulating microRNA biomarkers in plasma and serum using quantitative reverse transcription-PCR (qRT-PCR). *Methods* 50: 298–301. doi:10.1016/j.ymeth.2010.01.032.Analysis
- Kumar, S., Vijayan, M., Bhatti, J.S., Reddy, P.H., 2017. MicroRNAs as Peripheral Biomarkers in Aging and Age-Related Diseases, 1st ed, Progress in Molecular Biology and Translational Science. Elsevier Inc. doi:10.1016/bs.pmbts.2016.12.013
- Lewis, A.P., Jopling, C.L., 2010. Regulation and biological function of the liver-specific miR - 122: Figure 1. *Biochem. Soc. Trans.* 38: 1553–1557. doi:10.1042/bst0381553
- Li, T., Yan, X., Jiang, M., Xiang, L., 2016. The comparison of microRNA profile of the dermis between the young and elderly. *J. Dermatol. Sci.* 82: 75–83. doi

- Liang, H., Gong, F., Zhang, S., Zhang, C., Zen, K., 2014. The origin , function , and diagnostic potential of extracellular microRNAs in human body fluids 5. doi:10.1002/wrna.1208
- Liang, Y., Lu, J., Jin, Y., Peng, D., Xu, M., Xiao, B., et al., 2013. MicroRNA-376c Inhibits Cell Proliferation and Invasion in Osteosarcoma by Targeting to Transforming Growth Factor-Alpha. *DNA Cell Biol.* 32: 302–309. doi:10.1089/dna.2013.1977
- Liu, A., Xu, X., 2011. MicroRNA Isolation from Formalin-fixed Paraffin-embedded Tissue. *Methods Mol Biol* 1446–1446. doi:10.1007/978-3-642-16483-5_2249
- Liu, C.-G., Calin, G.A., Volinda, S., Carlo M Croce, 2008. MicroRNA expression profiling using microarrays. *Nat. Protoc.* 999: 285–296. doi:10.1007/978-1-62703-357-2-21
- López-otín, C., Blasco, M. a, Partridge, L., Serrano, M., 2013. The Hallmarks of Aging. *Cell* 153: 1194–1217. doi:10.1016/j.cell.2013.05.039.The
- Lu Qianjin, Chang Christopher C., R.B.C., 2015. Epigenetis and Dermatology. Academic Press is an imprint of Elsevier, San Diego, USA.
- Makrantonaki, E., Zouboulis, C.C., 2007. Molecular Mechanisms of Skin Aging State of the Art. *Ann. N.Y. Acad. Sci.* 1119: 40–50. doi:10.1196/annals.1404.027
- Mancini, M., Lena, A.M., Saintigny, G., Mahé, C., Di Daniele, N., Melino, G., et al., 2014. MicroRNAs in human skin ageing. *Ageing Res. Rev.* 17: 9–15. doi:10.1016/j.arr.2014.04.003
- Mara Mancini, Gaelle Saingtny, Christian Mahe, Margherita Annicchiarico-Petruzzelli, Gerry Melino, E.C., 2012. MicroRNA-152 and -181a participate in human dermal fibroblasts senescence acting on cell adhesion and remodeling of the extracellular matrix. *Ageing (Albany. NY).* 4: 843–853.
- Margis, R., Margis, R., Rieder, C.R.M., 2011. Identification of blood microRNAs associated to Parkinsonós disease. *J. Biotechnol.* 152: 96–101. doi:10.1016/j.jbiotec.2011.01.023
- McDonald, J.S., Milosevic, D., Reddi, H. V., Grebe, S.K., Algeciras-Schimmich, A., 2011. Analysis of circulating microRNA: Preamalytical and analytical challenges. *Clin. Chem.* 57: 833–840. doi:10.1373/clinchem.2010.157198
- Melis, J.P.M., Jonker, M.J., Vijg, J., Hoeijmakers, J.H.J., Breit, T.M., van Steeg, H., 2013. Aging on a different scale - chronological versus pathology-related aging. *Ageing (Albany. NY).* 5: 782–788.
- Melo, C.A., Melo, S.A., 2014. Biogenesis and Physiology of MicroRNAs, in: Fabbri, M. (Ed.), Non-Coding RNAs and Cancer. Springer Science+Business Media, pp. 5–25. doi:10.1007/978-1-4614-8444-8
- Menon, G.K., 1915. Skin Basics ; Structure and Function, in: Pappas, A. (Ed.), Lipids and Skin Health. Springer International Publishing, New York, pp. 9–23. doi:10.1007/978-3-319-09943-9
- 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. *Proc. Natl. Acad. Sci.* 105: 10513–10518. doi:10.1073/pnas.0804549105
- Nagaraj, S., Academy, P., Biology, E., Biology, E., Biology, E., 2017. Profile of 6 microRNA in blood plasma distinguish early stage Alzheimer ' s disease patients from non-demented subjects. doi:10.18632/oncotarget.15109
- Natalia, B., 2012. MicroRNA/mRNA regulatory networks in the control of skin development and regeneration. *Cell Cycle* 11: 37–41. doi:10.4161/cc.11.3.19058
- Nava, D., 2008. SKIN AGING HANDBOOK An Integrated Approach to Biochemistry and Product Development. William Andrew Inc New York, New York, USA.
- Naval, J., Alonso, V., Herranz, M.A., 2014. Genetic polymorphisms and skin aging: The identification of population genotypic groups holds potential for personalized treatments. *Clin. Cosmet. Investig. Dermatol.* 7: 207–214. doi:10.2147/CCID.S55669
- Ni, W., Leng, X., 2015. Dynamic miRNA – mRNA paradigms: New faces of miRNAs. *Biochem. Biophys. Reports* 4: 337–341. doi:10.1016/j.bbrep.2015.10.011
- Noren Hooten, N., Abdelmohsen, K., Gorospe, M., Ejiogu, N., Zonderman, A.B., Evans, M.K., 2010. microRNA expression patterns reveal differential expression of target genes with age. *PLoS One* 5. doi:10.1371/journal.pone.0010724
- Noren Hooten, N., Fitzpatrick, M., Wood, W.H., De, S., Ejiogu, N., Zhang, Y., et al., 2013. Age-related changes in microRNA levels in serum. *Aging (Albany. NY)*. 5: 725–740.
- O'Brien, J., Hayder, H., Zayed, Y., Peng, C., 2018. Overview of microRNA biogenesis, mechanisms of actions, and circulation. *Front. Endocrinol. (Lausanne)*. 9: 1–12. doi:10.3389/fendo.2018.00402
- Olivieri, F., Bonafè, M., Spazzafumo, L., Gobbi, M., Prattichizzo, F., Recchioni, R., et al., 2014. Age- and glycemia-related miR-126-3p levels in plasma and endothelial cells. *Aging (Albany. NY)*. 6: 771–787. doi:10.18632/aging.100693
- Olivieri, F., Capri, M., Bonafè, M., Morsiani, C., Jung, H.J., Spazzafumo, L., et al., 2017. Circulating miRNAs and miRNA shuttles as biomarkers: Perspective trajectories of healthy and unhealthy aging. *Mech. Ageing Dev.* 165: 162–170. doi:10.1016/j.mad.2016.12.004
- Olivieri, F., Rippo, M.R., Procopio, A.D., Fazioli, F., 2013. Circulating inflammatory miRs in aging and age-related diseases. *Front. Genet.* 4: 1–9. doi:10.3389/fgene.2013.00121
- Olivieri, F., Spazzafumo, L., Santini, G., Lazzarini, R., Albertini, M.C., Rippo, M.R., et al., 2012. Age-related differences in the expression of circulating microRNAs: miR-21 as a new circulating marker of inflammaging. *Mech.*

Ageing Dev. 133: 675–685. doi:10.1016/j.mad.2012.09.004

Padilla, R.S., Sebastian, S., Jiang, Z., Nindl, I., Larson, R., 2010. Gene Expression Patterns of Normal Human Skin, Actinic Keratosis, and Squamous Cell Carcinoma. *Arch Dermatology* 146: 288–293.

Pal, S. and, Tyler, J.K., 2016. Epigenetics and aging. *Sci. Adv.* doi:10.1126/sciadv.1600584

Pangkahila, W., 2011. Anti-Aging. Tetap Muda dan Sehat. Penerbit KOMPAS.

Park, N.J., Zhou, H., Elashoff, D., Henson, B.S., Kastratovic, D.A., Abemayor, E., et al., 2009. Salivary microRNA: Discovery, characterization, and clinical utility for oral cancer detection. *Clin. Cancer Res.* 15: 5473–5477. doi:10.1158/1078-0432.CCR-09-0736

Paul, F., Leidinger, P., Mueller, S.C., Meese, E., Frese, K., Schmitt, K., et al., 2013. A blood based 12-miRNA signature of Alzheimer disease patients. *Genome Biol.* 14: R78. doi:10.1186/gb-2013-14-7-r78

Podolska, A., Kaczkowski, B., Litman, T., Fredholm, M., Cirera, S., 2011. How the RNA isolation method can affect microRNA microarray results. *Acta Biochim. Pol.* 58: 535–40.

Pritchard, C.C., Cheng, H.H., Tewari, M., 2012. MicroRNA profiling: Approaches and considerations. *Nat. Rev. Genet.* 13: 358–369. doi:10.1038/nrg3198

Puizina-Ivic, N., 2008. Skin aging. *Acta Dermatoven APA* 17: 47–53.

Pusat data dan Informasi Kementrian Kesehatan RI, 2013. Gambaran Kesehatan Lanjut Usia di Indonesia. *Kementrian Kesehat. RI* 1–18.

Pusdatin Kemenkes Indonesia, 2014. Infodatin-Pusat Data dan Informasi Kementerian Kesehatan RI. Situasi dan analisis usia lanjut.

Rando Thomas A. and Chang Howard Y, 2012. Aging, Rejuvenation, and Epigenetic Reprogramming: Resetting the Aging Clock. *Cell* 148: 46–57. doi:10.1016/j.cell.2012.01.003.Aging

Rani, A., O'Shea, A., Ianov, L., Cohen, R.A., Woods, A.J., Foster, T.C., 2017. miRNA in circulating microvesicles as biomarkers for age-related cognitive decline. *Front. Aging Neurosci.* 9: 1–10. doi:10.3389/fnagi.2017.00323

Rinn, J.L., Chang, H.Y., 2012. Genome Regulation by Long Noncoding RNAs. *Annu. Rev. Biochem.* 81: 145–166. doi:10.1146/annurev-biochem-051410-092902

Rippo, M.R., Olivieri, F., Monsurrò, V., Prattichizzo, F., Albertini, M.C., Procopio, A.D., 2014. MitomiRs in human inflamm-aging: A hypothesis involving miR-181a, miR-34a and miR-146a. *Exp. Gerontol.* 56: 154–163. doi:10.1016/j.exger.2014.03.002

Rodríguez-rodero, S., Fernández-morera, J.L., Menéndez-torre, E., Calvanese, V., Fernández, A.F., Fraga, M.F., 2011. Aging Genetics and Aging. *Aging Dis.* 2: 186–195.

- Rossi, M.L., Ghosh, A.K., Bohr, V.A., 2010. Roles of Werner syndrome protein in protection of genome integrity. *DNA Repair (Amst)*. 9: 331–344. doi:10.1016/j.dnarep.2009.12.011
- Schneider, M.R., 2012. MicroRNAs as novel players in skin development , homeostasis and disease. *Br. J. Dermatol*. 166: 22–28. doi:10.1111/j.1365-2133.2011.10568.x
- Serna, E., Gambini, J., Borrás, C., Mohammed, K., Belenguer, A., Sanchis, P., et al., 2012. Centenarians, but not octogenarians, up-regulate the expression of microRNAs. *Sci. Rep.* 2: 1–5. doi:10.1038/srep00961
- Skog, J., Würdinger, T., van Rijn, S., Meijer, D.H., Gainche, L., Curry, W.T., et al., 2008. Glioblastoma microvesicles transport RNA and proteins that promote tumour growth and provide diagnostic biomarkers. *Nat. Cell Biol.* 10: 1470–1476. doi:10.1038/ncb1800
- Smith-Vikos, Thalyana, Liu, Z., Gorospe, Myriam, Ferruci, Luigi, Gill, Thomas M, S.F.J., 2016. A serum miRNA profile of human longevity: findings from the Baltimore Longitudinal Study of Aging (BLSA). *Aging (Albany. NY)*. 8: 2971–2987. doi:10.18632/aging.101106
- Smith-vikos, T., Slack, F.J., 2012. MicroRNAs and their roles in aging. *J. Cell Sci.* 125: 7–17. doi:10.1242/jcs.099200
- Soria-valles, C., Ramsay, A.J., Carlos, D., Osorio, F.G., Ba, C., Cobo, J., et al., 2012. Nuclear lamina defects cause ATM-dependent NF- k B activation and link accelerated aging to a systemic inflammatory response. *GENES Dev.* 26: 2311–2324. doi:10.1101/gad.197954.112.the
- Sredni, S.O.T., Gadd, S., Jafari, N., Huang, C.C., 2011. A parallel study of mrna and microrna profiling of peripheral blood in young adult women. *Front. Genet.* 2: 1–6. doi:10.3389/fgene.2011.00049
- Sudoyo, H., 2016. Secara Genetik, Asal Usul Orang Indonesia Itu Beragam. Jakarta.
- Suzuki, T., Springer, J., 2018. MicroRNAs in muscle wasting. *J. Cachexia. Sarcopenia Muscle* 9: 1209–1212. doi:10.1002/jcsm.12384
- Swindell, W.R., Johnston, A., Sun, L., Xing, X., Fisher, G.J., Bulyk, M.L., et al., 2012. Meta-Profiles of Gene Expression during Aging : Limited Similarities between Mouse and Human and an Unexpectedly Decreased Inflammatory Signature. *PLoS One* 7: 1–21. doi:10.1371/journal.pone.0033204
- Tajadini, M., Panjehpour, M., Javanmard, S., 2014. Comparison of SYBR Green and TaqMan methods in quantitative real-time polymerase chain reaction analysis of four adenosine receptor subtypes. *Adv. Biomed. Res.* 3: 85. doi:10.4103/2277-9175.127998
- Tanja, N., 2016. Basic Biology Of The Skin, in: Basic Biology Of The Skin Jones Amp Bartlett Learning. Jones and Bartlett Publisher, pp. 29–32.
- Tigges, J., Krutmann, J., Fritsche, E., Haendeler, J., Schaal, H., Fischer, J.W., et al., 2014. The hallmarks of fibroblast ageing. *Mech. Ageing Dev.* 138: 26–

44. doi:10.1016/j.mad.2014.03.004

Treiber, T., Treiber, N., Meister, G., 2019. Regulation of microRNA biogenesis and its crosstalk with other cellular pathways. *Nat. Rev. Mol. Cell Biol.* 20: 5–20. doi:10.1038/s41580-018-0059-1

Tu, L., Zhao, E., Zhao, W., Zhang, Z., Tang, D., Zhang, Y., et al., 2016. hsa-miR-376c-3p Regulates Gastric Tumor Growth Both In Vitro and In Vivo. *Biomed Res. Int.* 2016. doi:10.1155/2016/9604257

Tumonggor, M.K., Karafet, T.M., Hallmark, B., Lansing, J.S., Sudoyo, H., Hammer, M.F., et al., 2013. The Indonesian archipelago: An ancient genetic highway linking Asia and the Pacific. *J. Hum. Genet.* 58: 165–173. doi:10.1038/jhg.2012.154

Turchinovich, A., Weiz, L., Burwinkel, B., 2012. Extracellular miRNAs: The mystery of their origin and function. *Trends Biochem. Sci.* 37: 460–465. doi:10.1016/j.tibs.2012.08.003

U.S Department of Health and Human Services and WHO, 2011. Global Health and Aging, NIH Publication no 117737.

United, N., 2016. Transforming our world: the 2030 agenda for sustainable development. *United Nations New York.*

United Nations, 2015. The Millennium Development Goals Report. *United nations New York.*

Vashi, N.A., De Castro Maymone, M.B., Kundu, R. V., 2016. Aging differences in ethnic skin. *J. Clin. Aesthet. Dermatol.* 9: 31–38.

Vickers, K.C., Palmisano, B.T., Shoucri, B.M., Shamburek, R.D., Remaley, A.T., 2011. MicroRNAs are transported in plasma and delivered to recipient cells by high-density lipoproteins. *Nat. Cell Biol.* 13: 423–435. doi:10.1038/ncb2210

Walters, K.A. and R.M.S., 2002. The Structure and Function of Skin, in: Walters, K.A. (Ed.), *Dermatological and Transdermal Formulations*. Taylor & Francis Group, New York, USA.

Weilner, S., Schraml, E., Redl, H., Grillari-voglauer, R., Grillari, J., 2013a. Secretion of microvesicular miRNAs in cellular and organismal aging. *EXG* 48: 626–633. doi:10.1016/j.exger.2012.11.017

Weilner, S., Schraml, E., Redl, H., Grillari-Voglauer, R., Grillari, J., 2013b. Secretion of microvesicular miRNAs in cellular and organismal aging. *Exp. Gerontol.* 48: 626–633. doi:10.1016/j.exger.2012.11.017

Whitley, S.K., Horne, W.T., Kolls, J.K., 2016. Research Techniques Made Simple: Methodology and Clinical Applications of RNA Sequencing. *J. Invest. Dermatol.* 136: e77–e82. doi:10.1016/j.jid.2016.06.003

Zaravinos, A., 2015a. The Regulatory Role of MicroRNAs in EMT and Cancer. *J. Oncol.* 2015: 1–13.

Zaravinos, A., 2015b. The Regulatory Role of MicroRNAs in EMT and Cancer. *J.*

Oncol. 2015: 3–4. doi:10.1155/2015/865816

Zhang, H., Yang, H., Zhang, C., Jing, Y., Wang, C., Liu, C., et al., 2015. Investigation of MicroRNA Expression in Human Serum During the Aging Process. *Journals Gerontol. Ser. A* 70: 102–109. doi:10.1093/gerona/glu145

Zouboulis, C.C., Makrantonaki, E., 2011. Clinical aspects and molecular diagnostics of skin aging. *Clin. Dermatol.* 29: 3–14. doi:10.1016/j.clindermatol.2010.07.001