

REFERENCES

- Adriana, C.M.P. (2013). Effect of GSTM1-Polymorphism on Disease Progression and Oxidative Stress in HIV Infection: Modulation by HIV/HCV Co-Infection and Alcohol Consumption. *Journal of AIDS & Clinical Research*, 04(09). doi:<https://doi.org/10.4172/2155-6113.1000237>.
- Atri, C., Guerfali, F. and Laouini, D. (2018). Role of Human Macrophage Polarization in Inflammation during Infectious Diseases. *International Journal of Molecular Sciences*, [online] 19(6), p.1801. doi:<https://doi.org/10.3390/ijms19061801>.
- Awasthi, Y.C. (2006). *Toxicology of Glutathione Transferases*. CRC Press eBooks. Informa. doi:<https://doi.org/10.1201/9781420004489>.
- Chen, L., Deng, H., Cui, H., Fang, J., Zuo, Z., Deng, J., Li, Y., Wang, X. and Zhao, L. (2018b). Inflammatory Responses and inflammation-associated Diseases in Organs. *Oncotarget*, [online] 9(6), pp.7204–7218. doi:<https://doi.org/10.18632/oncotarget.23208>.
- Damavandi, N. and Zeinali, S. (2021). Association of xenobiotic-metabolizing enzymes (GSTM1 and GSTT 1), and pro-inflammatory cytokines (TNF- α and IL-6) genetic polymorphisms with non-alcoholic fatty liver disease. *Molecular Biology Reports*, 48(2), pp.1225–1231. doi:<https://doi.org/10.1007/s11033-021-06142-1>.
- Das, K. and Roychoudhury, A. (2014). Reactive oxygen species (ROS) and response of antioxidants as ROS-scavengers during environmental stress in plants. *Frontiers in Environmental Science*, [online] 2. doi:<https://doi.org/10.3389/fenvs.2014.00053>.

Deshmane, S.L., Kremlev, S., Amini, S. and Sawaya, B.E. (2009). Monocyte Chemoattractant Protein-1 (MCP-1): An Overview. *Journal of Interferon & Cytokine Research*, [online] 29(6), pp.313–326. doi:<https://doi.org/10.1089/jir.2008.0027>.

Donadelli, R., Abbate, M., Zanchi, C., Corna, D., Tomasoni, S., Benigni, A., Remuzzi, G. and Zoja, C. (2000). Protein traffic activates NF-kB gene signaling and promotes MCP-1-dependent interstitial inflammation. *American Journal of Kidney Diseases*, 36(6), pp.1226–1241. doi:<https://doi.org/10.1053/ajkd.2000.19838>.

Dunna, N.R., Vure, S., Sailaja, K., Surekha, D., Raghunadharao, D., Rajappa, S. and Vishnupriya, S. (2013). Deletion of GSTM1 and T1 Genes as a Risk Factor for Development of Acute Leukemia. *Asian Pacific Journal of Cancer Prevention*, 14(4), pp.2221–2224. doi:<https://doi.org/10.7314/apjcp.2013.14.4.2221>.

Forcados, G.E., Muhammad, A., Oladipo, O.O., Makama, S. and Meseko, C.A. (2021). Metabolic Implications of Oxidative Stress and Inflammatory Process in SARS-CoV-2 Pathogenesis: Therapeutic Potential of Natural Antioxidants. *Frontiers in Cellular and Infection Microbiology*, 11. doi:<https://doi.org/10.3389/fcimb.2021.654813>.

Grazuleviciene, R., Danileviciute, A., Nadisauskiene, R. and Vencloviene, J. (2009). Maternal Smoking, GSTM1 and GSTT1 Polymorphism and Susceptibility to Adverse Pregnancy Outcomes. *International Journal of Environmental Research and Public Health*, 6(3), pp.1282–1297. doi:<https://doi.org/10.3390/ijerph6031282>.

Gschwandtner, M., Derler, R. and Midwood, K.S. (2019). More Than Just Attractive: How CCL2 Influences Myeloid Cell Behavior Beyond

Chemotaxis. *Frontiers in Immunology*, 10.
doi:<https://doi.org/10.3389/fimmu.2019.02759>.

Hollman, A.L., Tchounwou, P.B. and Huang, H.-C. (2016). The Association between Gene-Environment Interactions and Diseases Involving the Human GST Superfamily with SNP Variants. *International Journal of Environmental Research and Public Health*, [online] 13(4), p.379.
doi:<https://doi.org/10.3390/ijerph13040379>.

Huang, Y.-C., Joseph Chieh-Yu Lai, Peng, P.-H., Wei, K.-C. and Wu, K.-J. (2021). Chromatin accessibility analysis identifies GSTM1 as a prognostic marker in human glioblastoma patients. *Clinical Epigenetics*, 13(1).
doi:<https://doi.org/10.1186/s13148-021-01181-8>.

Hussain, T., Tan, B., Yin, Y., Blachier, F., Tossou, M.C.B. and Rahu, N. (2016). Oxidative Stress and Inflammation: What Polyphenols Can Do for Us? *Oxidative Medicine and Cellular Longevity*, [online] 2016(7432797), pp.1–9. doi:<https://doi.org/10.1155/2016/7432797>.

Khabipov, A., Käding, A., Liedtke, K.R., Freund, E., Partecke, L.-I. and Bekeschus, S. (2019). RAW 264.7 Macrophage Polarization by Pancreatic Cancer Cells - A Model for Studying Tumour-promoting Macrophages. *Anticancer Research*, [online] 39(6), pp.2871–2882.
doi:<https://doi.org/10.21873/anticancer.13416>.

Laura, B.M., Sawyer, A.J., Antonios C., Skokos, E.A. and Kyriakides, T.R. (2015). Loss of monocyte chemoattractant protein-1 alters macrophage polarization and reduces NFκB activation in the foreign body response. *Acta Biomaterialia*, [online] 11, pp.37–47.
doi:<https://doi.org/10.1016/j.actbio.2014.09.022>.

- Li, S., Xue, F., Zheng, Y., Yang, P., Lin, S., Deng, Y., Xu, P., Zhou, L., Hao, Q., Zhai, Z., Wu, Y., Dai, Z. and Chen, S. (2019). GSTM1 and GSTT1 null genotype increase the risk of hepatocellular carcinoma: evidence based on 46 studies. *Cancer Cell International*, 19(1). doi:<https://doi.org/10.1186/s12935-019-0792-3>.
- Lingappan, K. (2018). NF- κ B in oxidative stress. *Current Opinion in Toxicology*, 7, pp.81–86. doi:<https://doi.org/10.1016/j.cotox.2017.11.002>.
- Liu, B., Zhang, M., Zhao, J., Zheng, M. and Yang, H. (2018). Imbalance of M1/M2 macrophages is linked to severity level of knee osteoarthritis. *Experimental and Therapeutic Medicine*. doi:<https://doi.org/10.3892/etm.2018.6852>.
- Liu, T., Zhang, L., Joo, D. and Sun, S.-C. (2017). NF- κ B signaling in inflammation. *Signal transduction and targeted therapy*, [online] 2(17023). doi:<https://doi.org/10.1038/sigtrans.2017.23>.
- Lizard, N.S., Coudert, B., Colosetti, P., Riedinger, J.-M., Fargeot, P. and Brunet, L.P. (1999). Glutathione S-transferase M1 null genotype: lack of association with tumour characteristics and survival in advanced breast cancer. *Breast Cancer Research*, 1(1). doi:<https://doi.org/10.1186/bcr17>.
- Lu, Y., Zhou, J., Zhang, J., Wang, Z., Yu, Y., Miao, M. and Yao, Q. (2019). Dual roles of glutathione S-transferase mu 1 in the development and metastasis of hepatocellular carcinoma. *Biomedicine & Pharmacotherapy*, [online] 120, p.109532. doi:<https://doi.org/10.1016/j.biopha.2019.109532>.
- Narasimhan, V.M., Xue, Y. and Tyler, S.C. (2016). Human Knockout Carriers: Dead, Diseased, Healthy, or Improved? *Trends in Molecular Medicine*, [online] 22(4), pp.341–351. doi:<https://doi.org/10.1016/j.molmed.2016.02.006>.

- Noda, N. and Wakasugi, H. (2001). Cancer and Oxidative Stress. *Journal of the Japan Medical Association*, [online] 44(12), pp.1571–1574. Available at: https://www.med.or.jp/english/pdf/2001_12/535_539.pdf [Accessed 15 Aug. 2022].
- Nteeba, J., Ross, J.W., Perfield, J.W. and Keating, A.F. (2013). High fat diet induced obesity alters ovarian phosphatidylinositol-3 kinase signaling gene expression. *Reproductive Toxicology*, 42, pp.68–77. doi:<https://doi.org/10.1016/j.reprotox.2013.07.026>.
- Otto, K.R., Jurgovsky, K., Schierhorn, K. and Kunkel, G. (2003). Antioxidative enzymes in human nasal mucosa after exposure to ozone. Possible role of GSTM1 deficiency. *Inflammation Research*, 52(2), pp.51–55. doi:<https://doi.org/10.1007/s000110300000>.
- Pérez, S. and Rius, P.S. (2022). Macrophage Polarization and Reprogramming in Acute Inflammation: A Redox Perspective. *Antioxidants*, 11(7), p.1394. doi:<https://doi.org/10.3390/antiox11071394>.
- Pizzino, G., Irrera, N., Cucinotta, M., Pallio, G., Mannino, F., Arcoraci, V., Squadrito, F., Altavilla, D. and Bitto, A. (2017). Oxidative Stress: Harms and Benefits for Human Health. *Oxidative Medicine and Cellular Longevity*, 2017(8416763), pp.1–13. doi:<https://doi.org/10.1155/2017/8416763>.
- Pljesa, E.M., Savic, R.A., Matic, M., Coric, V., Djukic, T., Radic, T. and Simic, T. (2018). Glutathione Transferases: Potential Targets to Overcome Chemoresistance in Solid Tumors. *International Journal of Molecular Sciences*, 19(12), p.3785. doi:<https://doi.org/10.3390/ijms19123785>.

Polosukhin, V.V., Polosukhin, I.V., Hoskins, A., Han, W., Abdolrasulnia, R., Blackwell, T.S. and Dworski, R. (2014). Glutathione S-transferase M1 modulates allergen-induced NF- κ B activation in asthmatic airway epithelium. *Allergy*, 69(12), pp.1666–1672. doi:<https://doi.org/10.1111/all.12506>.

Prysyazhnyuk, V., Voloshyn, O., Prysiashniuk, I., Ilashchuk, T., Sydorchuk, L. and Prysyazhnyuk, P. (2020). Glutathione S-transferase T1 and M1 null genotype distribution among non-alcoholic fatty liver disease patients and its association with cytokine and adipokine profiles. *Clinical and Experimental Hepatology*, 6(2), pp.142–149. doi:<https://doi.org/10.5114/ceh.2020.95678>.

Ran, F.A., Hsu, P.D., Wright, J., Agarwala, V., Scott, D.A. and Zhang, F. (2013). Genome engineering using the CRISPR-Cas9 system. *Nature Protocols*, [online] 8(11), pp.2281–2308. doi:<https://doi.org/10.1038/nprot.2013.143>.

Ray, P.D., Huang, B.-W. and Tsuji, Y. (2012). Reactive Oxygen Species (ROS) Homeostasis and Redox Regulation in Cellular Signaling. *Cellular Signalling*, [online] 24(5), pp.981–990. doi:<https://doi.org/10.1016/j.cellsig.2012.01.008>.

Romieu, I., Ramirez, A.M., Sienra, M.J.J., Moreno, M.H., del Rio, N.B.E., David, G., Marzec, J., Hernandez, A.M. and London, S. (2006). GSTM1 and GSTP1 and respiratory health in asthmatic children exposed to ozone. *European Respiratory Journal*, [online] 28(5), pp.953–959. doi:<https://doi.org/10.1183/09031936.06.00114905>.

Rovin, B.H., Dickerson, J.A., Tan, L.C. and Hebert, C.A. (1995). Activation of nuclear factor-kappa B correlates with MCP-1 expression by human mesangial cells. *Kidney International*, [online] 48(4), pp.1263–1271. doi:<https://doi.org/10.1038/ki.1995.410>.

- Saitou, M., Satta, Y., Gokcumen, O. and Ishida, T. (2018). Complex evolution of the GSTM gene family involves sharing of GSTM1 deletion polymorphism in humans and chimpanzees. *BMC Genomics*, 19(1). doi:<https://doi.org/10.1186/s12864-018-4676-z>.
- Salzano, S., Checconi, P., Hanschmann, E.-M., Lillig, C.H., Bowler, L.D., Chan, P., Vaudry, D., Mengozzi, M., Coppo, L., Sacre, S., Atkuri, K.R., Sahaf, B., Herzenberg, L.A., Herzenberg, L.A., Mullen, L. and Ghezzi, P. (2014). Linkage of inflammation and oxidative stress via release of glutathionylated peroxiredoxin-2, which acts as a danger signal. *Proceedings of the National Academy of Sciences of the United States of America*, [online] 111(33), pp.12157–62. doi:<https://doi.org/10.1073/pnas.1401712111>.
- Sameer, A.S., Banday, M.Z. and Nissar, S. (2021). Mutations and Polymorphisms: What Is The Difference? *Genetic Polymorphism and cancer susceptibility*, pp.1–21. doi:https://doi.org/10.1007/978-981-33-6699-2_1.
- Sánchez, S.M., Pelegrín, H.J.P., Hellin, M.D., Guerrero, S.Y., Corno, C.A., Cabezas, H.J., Pastor, Q.F., Fernández, R.J.A., Aliaga, S.A., Lucero, B.M. and Camacho, A.F. (2020). Genotype of Null Polymorphisms in Genes GSTM1, GSTT1, CYP1A1, and CYP1A1*2A (rs4646903 T>C)/CYP1A1*2C (rs1048943 A>G) in Patients with Larynx Cancer in Southeast Spain. *Cancers*, 12(9), p.2478. doi:<https://doi.org/10.3390/cancers12092478>.
- Shin, I.K., Choi, E.T., Eisuke, D., Agarwal, S., Chang, D.T., Wilson, A., Lo, B., Indigo V.L., Gonzalez, S.F., Imai, T. and Sawa, A. (2019). Glutathione S - transferases promote proinflammatory astrocyte-microglia communication during brain inflammation. *Science Signaling*, 12(569). doi:<https://doi.org/10.1126/scisignal.aar2124>.

- Sica, A. and Mantovani, A. (2012). Macrophage plasticity and polarization: in vivo veritas. *Journal of Clinical Investigation*, 122(3), pp.787–795. doi:<https://doi.org/10.1172/jci59643>.
- Singh, R.R. and Reindl, K.M. (2021). Glutathione S-Transferases in Cancer. *Antioxidants*, [online] 10(5), p.701. doi:<https://doi.org/10.3390/antiox10050701>.
- Singh, S., Anshita, D. and Ravichandiran, V. (2021). MCP-1: Function, regulation, and involvement in disease. *International Immunopharmacology*, 101, p.107598. doi:<https://doi.org/10.1016/j.intimp.2021.107598>.
- Song, Y., Shan, Z., Liu, X., Chen, X., Luo, C., Chen, L., Wang, Y., Gong, L., Liu, L. and Liang, J. (2021). An updated meta-analysis showed smoking modify the association of GSTM1 null genotype on the risk of coronary heart disease. *Bioscience Reports*, [online] 41(2), p.BSR20200490. doi:<https://doi.org/10.1042/BSR20200490>.
- Taciak, B., Białasek, M., Braniewska, A., Sas, Z., Sawicka, P., Kiraga, Ł., Rygiel, T. and Król, M. (2018). Evaluation of phenotypic and functional stability of RAW 264.7 cell line through serial passages. *PLOS ONE*, 13(6), p.e0198943. doi:<https://doi.org/10.1371/journal.pone.0198943>.
- Virág, L., Jaén, R.I., Regdon, Z., Boscá, L. and Prieto, P. (2019). Self-defense of macrophages against oxidative injury: Fighting for their own survival. *Redox Biology*, [online] 26, p.101261. doi:<https://doi.org/10.1016/j.redox.2019.101261>.
- Wang, H.X., Li, M., Lee, C.M., Chakraborty, S., Kim, H.W., Bao, G. and Leong, K.W. (2017). CRISPR/Cas9-Based Genome Editing for Disease Modeling

and Therapy: Challenges and Opportunities for Nonviral Delivery. *Chemical reviews*, [online] 117(15), pp.9874–9906. doi:<https://doi.org/10.1021/acs.chemrev.6b00799>.

Wu, W., Doreswamy, V., Diaz, S.D., Samet, J.M., Kesic, M., Dailey, L., Zhang, W., Jaspers, I. and Peden, D.B. (2011). GSTM1 modulation of IL-8 expression in human bronchial epithelial cells exposed to ozone. *Free Radical Biology and Medicine*, 51(2), pp.522–529. doi:<https://doi.org/10.1016/j.freeradbiomed.2011.05.006>.

Wu, W., Peden, D. and Diaz, S.D. (2012). Role of GSTM1 in resistance to lung inflammation. *Free Radical Biology and Medicine*, [online] 53(4), pp.721–729. doi:<https://doi.org/10.1016/j.freeradbiomed.2012.05.037>.

Wu, W., Peden, D.B., McConnell, R., Fruin, S. and Diaz, S.D. (2012). Glutathione-S-transferase M1 regulation of diesel exhaust particle-induced pro-inflammatory mediator expression in normal human bronchial epithelial cells. *Particle and Fibre Toxicology*, 9(1), p.31. doi:<https://doi.org/10.1186/1743-8977-9-31>.

Wu, M., Bian, Q., Liu, Y., Fernandes, A.F., Taylor, A., Pereira, P. and Shang, F. (2009). Sustained oxidative stress inhibits NF- κ B activation partially via inactivating the proteasome. *Free Radical Biology and Medicine*, 46(1), pp.62–69. doi:<https://doi.org/10.1016/j.freeradbiomed.2008.09.021>.

Widjaja, L., Wijaya, C.D., Sim, M., Hadi, W.W. and Florenly (2021). Extracted *Passiflora edulis* Pulp to Reduce Inflammation in LPS-activated Macrophage Cell Line: RAW 264.7. doi:<https://doi.org/10.1109/inhence52833.2021.9537266>.

Yunna, C., Mengru, H., Lei, W. and Weidong, C. (2020). Macrophage M1/M2 polarization. *European Journal of Pharmacology*, 877, p.173090. doi:<https://doi.org/10.1016/j.ejphar.2020.173090>.

Zhao, Y., Deng, X., Song, G.-Q., Qin, S. and Liu, Z. (2013). The GSTM1 Null Genotype Increased Risk of Gastric Cancer: A Meta-Analysis Based on 46 Studies. *PLOS ONE*, [online] 8(11), pp.e81403–e81403. doi:<https://doi.org/10.1371/journal.pone.0081403>.