

## DAFTAR PUSTAKA

- Babaei, Z., Parsian, H., Korani, B., Mostafazadeh, A., & Moslemi, D. (2022). Body composition and serum levels of matrix metalloproteinase-9, adiponectin and AMP-activated protein kinase in breast cancer survivors. *Journal of Research in Medical Sciences: The Official Journal of Isfahan University of Medical Sciences*, 27.
- Burotto, M., Chiou, V. L., Lee, J., & Kohn, E. C. (2014). The MAPK pathway across different malignancies: a new perspective. *Cancer*, 120(22), 3446–3456.
- Cao, D., Polyak, K., Halushka, M. K., Nassar, H., Kouprina, N., Iacobuzio-Donahue, C., Wu, X., Sukumar, S., Hicks, J., & De Marzo, A. (2008). Serial analysis of gene expression of lobular carcinoma in situ identifies down regulation of claudin 4 and overexpression of matrix metalloproteinase 9. *Breast Cancer Research*, 10(5), 1–10.
- Cao, W., Chen, H.-D., Yu, Y.-W., Li, N., & Chen, W.-Q. (2021). Changing profiles of cancer burden worldwide and in China: a secondary analysis of the global cancer statistics 2020. *Chinese Medical Journal*, 134(07), 783–791.
- Christensen, J., & Shastri, V. P. (2015). Matrix-metalloproteinase-9 is cleaved and activated by cathepsin K. *BMC Research Notes*, 8, 1–8.
- Clevers, H. (2006). Wnt/ $\beta$ -catenin signaling in development and disease. *Cell*, 127(3), 469–480.
- Dawood, S. (2010). Triple-negative breast cancer: epidemiology and management options. *Drugs*, 70, 2247–2258.
- de Almeida, L. G. N., Thode, H., Eslambolchi, Y., Chopra, S., Young, D., Gill, S., Devel, L., & Dufour, A. (2022). Matrix metalloproteinases: From molecular mechanisms to physiology, pathophysiology, and pharmacology. *Pharmacological Reviews*, 74(3), 714–770.
- Emdad, L., Das, S. K., Dasgupta, S., Hu, B., Sarkar, D., & Fisher, P. B. (2013a). AEG-1/MTDH/LYRIC: signaling pathways, downstream genes, interacting proteins, and regulation of tumor angiogenesis. In *Advances in cancer research* (Vol. 120, pp. 75–111). Elsevier.
- Emdad, L., Das, S. K., Dasgupta, S., Hu, B., Sarkar, D., & Fisher, P. B. (2013b). AEG-1/MTDH/LYRIC: signaling pathways, downstream genes, interacting proteins, and regulation of tumor angiogenesis. In *Advances in cancer research* (Vol. 120, pp. 75–111). Elsevier.
- Emdad, L., Hu, B., Kegelman, T. P., Das, S. K., Sarkar, D., & Fisher, P. B. (2015). How does the oncogene astrocyte elevated gene-1 (AEG-1) augment glioma progression? *Future Neurology*, 10(4), 293–296.
- Emdad, L., Lee, S.-G., Su, Z. Z., Jeon, H. Y., Boukerche, H., Sarkar, D., & Fisher, P. B. (2009). Astrocyte elevated gene-1 (AEG-1) functions as an oncogene and regulates angiogenesis. *Proceedings of the National Academy of Sciences*, 106(50), 21300–21305.
- Erdem, H., Yıldırım, U., Uzunlar, A. K., Cam, K., Tekin, A., Kayıkçı, M. A., Şahiner, C., Oktay, M., Ankaralı, H., & Aydın, L. Y. (2013). Relationship among expression of basic-fibroblast growth factor, MTDH/astrocyte elevated gene-1, adenomatous polyposis coli, matrix metalloproteinase 9, and COX-2 markers with prognostic factors in prostate carcinomas. *Nigerian Journal of Clinical Practice*, 16(4).
- Ferrari, P., Scatena, C., Ghilli, M., Bargagna, I., Lorenzini, G., & Nicolini, A. (2022). Molecular mechanisms, biomarkers and emerging therapies for chemotherapy resistant TNBC. *International Journal of Molecular Sciences*, 23(3), 1665.
- Fouad, A. M., Elzawawy, A. M., Abdelmohsen, S. E., & Noufal, N. (2020). Prognostic Value of the Matrix Metalloproteinase-9 and Its Relation to Clinicopathological Features in Women with Invasive Breast Cancer. *Journal of Cancer Therapy*, 11(7), 448–461.
- Gollavilli, P. N., Kanugula, A. K., Koyada, R., Karnewar, S., Neeli, P. K., & Kotamraju, S. (2015). AMPK inhibits MTDH expression via GSK 3 $\beta$  and SIRT 1 activation: potential role in triple negative breast cancer cell proliferation. *The FEBS Journal*, 282(20), 3971–3985.
- Harvey N. Mayrovitz, P. (2022). *Breast Cancer* (Vol. 1).
- Hsu, J. C.-C., Reid, D. W., Hoffman, A. M., Sarkar, D., & Nicchitta, C. V. (2018). Oncoprotein AEG-1 is an endoplasmic reticulum RNA-binding protein whose interactome is enriched in organelle resident protein-encoding mRNAs. *RNA*, 24(5), 688–703.
- Huang, H. (2018). Matrix metalloproteinase-9 (MMP-9) as a cancer biomarker and MMP-9 biosensors: recent advances. *Sensors*, 18(10), 3249.

- Huang, Y., Ren, G.-P., Xu, C., Dong, S.-F., Wang, Y., Gan, Y., Zhu, L., & Feng, T.-Y. (2014). Expression of astrocyte elevated gene-1 (AEG-1) as a biomarker for aggressive pancreatic ductal adenocarcinoma. *BMC Cancer*, *14*(1), 1–10.
- Jiang, H., & Li, H. (2021). Prognostic values of tumoral MMP2 and MMP9 overexpression in breast cancer: A systematic review and meta-analysis. *BMC Cancer*, *21*, 1–13.
- Joseph, C., Alsaleem, M., Orah, N., Narasimha, P. L., Miligy, I. M., Kurozumi, S., Ellis, I. O., Mongan, N. P., Green, A. R., & Rakha, E. A. (2020a). Elevated MMP9 expression in breast cancer is a predictor of shorter patient survival. *Breast Cancer Research and Treatment*, *182*, 267–282.
- Joseph, C., Alsaleem, M., Orah, N., Narasimha, P. L., Miligy, I. M., Kurozumi, S., Ellis, I. O., Mongan, N. P., Green, A. R., & Rakha, E. A. (2020b). Elevated MMP9 expression in breast cancer is a predictor of shorter patient survival. *Breast Cancer Research and Treatment*, *182*, 267–282.
- Kalavaska, K., Cierna, Z., Karaba, M., Minarik, G., Benca, J., Sedlackova, T., Kolekova, D., Mrvova, I., Pindak, D., & Mardiak, J. (2021). Prognostic role of matrix metalloproteinase 9 in early breast cancer. *Oncology Letters*, *21*(2), 1.
- Kashyap, D., Pal, D., Sharma, R., Garg, V. K., Goel, N., Koundal, D., Zaguia, A., Koundal, S., & Belay, A. (2022). Global increase in breast cancer incidence: risk factors and preventive measures. *BioMed Research International*, 2022.
- Khan, M., & Sarkar, D. (2021). The scope of astrocyte elevated gene-1/metadherin (AEG-1/MTDH) in cancer clinicopathology: A review. *Genes*, *12*(2), 308.
- Koca, B., Yildirim, M., & Kuru, B. (2022). Prognostic factors affecting disease-free survival in triple-negative breast cancer and impact of Ki-67. *Indian Journal of Surgery*, *84*(Suppl 3), 708–713.
- Ławicki, S., Zajkowska, M., Głazewska, E. K., Będkowska, G. E., & Szmitkowski, M. (2016). Plasma levels and diagnostic utility of VEGF, MMP-9, and TIMP-1 in the diagnosis of patients with breast cancer. *OncoTargets and Therapy*, 911–919.
- Lee, S.-G., Kim, K., Kegelmann, T. P., Dash, R., Das, S. K., Choi, J. K., Emdad, L., Howlett, E. L., Jeon, H. Y., & Su, Z. Z. (2011). Oncogene AEG-1 promotes glioma-induced neurodegeneration by increasing glutamate excitotoxicity. *Cancer Research*, *71*(20), 6514–6523.
- Lejeune, M., Reverté, L., Gallardo, N., Sauras, E., Bosch, R., Mata, D., Roso, A., Petit, A., Peg, V., & Riu, F. (2023). Matrix Metalloproteinase-9 Expression Is Associated with the Absence of Response to Neoadjuvant Chemotherapy in Triple-Negative Breast Cancer Patients. *International Journal of Molecular Sciences*, *24*(14), 11297.
- Li, C., Li, R., Song, H., Wang, D., Feng, T., Yu, X., Zhao, Y., Liu, J., Yu, X., & Wang, Y. (2011). Significance of aeg-1 expression in correlation with vegf, microvessel density and clinicopathological characteristics in triple-negative breast cancer. *Journal of Surgical Oncology*, *103*(2), 184–192.
- Li, Y., Zhang, H., Merkhher, Y., Chen, L., Liu, N., Leonov, S., & Chen, Y. (2022). Recent advances in therapeutic strategies for triple-negative breast cancer. *Journal of Hematology & Oncology*, *15*(1), 121.
- Liu, L., Wu, J., Ying, Z., Chen, B., Han, A., Liang, Y., Song, L., Yuan, J., Li, J., & Li, M. (2010a). Astrocyte elevated gene-1 upregulates matrix metalloproteinase-9 and induces human glioma invasion. *Cancer Research*, *70*(9), 3750–3759.
- Liu, L., Wu, J., Ying, Z., Chen, B., Han, A., Liang, Y., Song, L., Yuan, J., Li, J., & Li, M. (2010b). Astrocyte elevated gene-1 upregulates matrix metalloproteinase-9 and induces human glioma invasion. *Cancer Research*, *70*(9), 3750–3759.
- Liu, X., Lv, Z., Zou, J., Liu, X., Ma, J., Sun, C., Sa, N., & Xu, W. (2016a). Elevated AEG-1 expression in macrophages promotes hypopharyngeal cancer invasion through the STAT3-MMP-9 signaling pathway. *Oncotarget*, *7*(47), 77244.
- Liu, X., Lv, Z., Zou, J., Liu, X., Ma, J., Sun, C., Sa, N., & Xu, W. (2016b). Elevated AEG-1 expression in macrophages promotes hypopharyngeal cancer invasion through the STAT3-MMP-9 signaling pathway. *Oncotarget*, *7*(47), 77244.
- MacDonald, B. T., Tamai, K., & He, X. (2009). Wnt/ $\beta$ -catenin signaling: components, mechanisms, and diseases. *Developmental Cell*, *17*(1), 9–26.
- Malayaperumal, S., Sriramulu, S., Jothimani, G., Banerjee, A., & Pathak, S. (2021). A review of AEG-1 oncogene regulating MicroRNA expression in colon cancer progression. *Endocrine, Metabolic & Immune Disorders-Drug Targets (Formerly Current Drug Targets-Immune, Endocrine &*

- Metabolic Disorders*), 21(1), 27–34.
- Mandapati, A., & Lukong, K. E. (2023). Triple negative breast cancer: Approved treatment options and their mechanisms of action. *Journal of Cancer Research and Clinical Oncology*, 149(7), 3701–3719.
- Manna, D., & Sarkar, D. (2021a). Multifunctional role of astrocyte elevated gene-1 (AEG-1) in cancer: focus on drug Resistance. *Cancers*, 13(8), 1792.
- Manna, D., & Sarkar, D. (2021b). Multifunctional role of astrocyte elevated gene-1 (AEG-1) in cancer: focus on drug Resistance. *Cancers*, 13(8), 1792.
- Martins, L. M., Dourado, C. S. de M. E., Campos-Verdes, L. M., Sampaio, F. A., Revoredo, C. M. S., Costa-Silva, D. R., da Conceição Barros-Oliveira, M., Junior, E. de J. N., do Rego-Medeiros, L. M., & Gebrim, L. H. (2019). Expression of matrix metalloproteinase 2 and 9 in breast cancer and breast fibroadenoma: a randomized, double-blind study. *Oncotarget*, 10(64), 6879.
- Mehner, C., Hockla, A., Miller, E., Ran, S., Radisky, D. C., & Radisky, E. S. (2014). Tumor cell-produced matrix metalloproteinase 9 (MMP-9) drives malignant progression and metastasis of basal-like triple negative breast cancer. *Oncotarget*, 5(9), 2736.
- Merdad, A., Karim, S., Schulten, H.-J., Dallol, A., Buhmeida, A., Al-Thubaity, F., Gari, M. A., Chaudhary, A. G. A., Abuzenadah, A. M., & Al-Qahtani, M. H. (2014). Expression of matrix metalloproteinases (MMPs) in primary human breast cancer: MMP-9 as a potential biomarker for cancer invasion and metastasis. *Anticancer Research*, 34(3), 1355–1366.
- Nishimura, R., Osako, T., Okumura, Y., Nakano, M., Otsuka, H., Fujisue, M., & Arima, N. (2022). Triple negative breast cancer: an analysis of the subtypes and the effects of menopausal status on invasive breast cancer. *Journal of Clinical Medicine*, 11(9), 2331.
- PERABOI. (2023). *Panduan Tatalaksana Kanker Payudara 2023* (Vol. 3). PERABOI.
- Polakis, P. (2007). The many ways of Wnt in cancer. *Current Opinion in Genetics & Development*, 17(1), 45–51.
- Pratama, E. P., Dewi, C., Aspitriani, A., & Bahar, E. (2023a). Comparison of MMP-9 Density Between Triple Negative and HER2 Enriched Breast Carcinoma Subtypes. *Majalah Patologi Indonesia*, 32(2).
- Pratama, E. P., Dewi, C., Aspitriani, A., & Bahar, E. (2023b). Comparison of MMP-9 Density Between Triple Negative and HER2 Enriched Breast Carcinoma Subtypes. *Majalah Patologi Indonesia*, 32(2).
- Rashid, Z. A., & Bardaweel, S. K. (2023). Novel matrix metalloproteinase-9 (MMP-9) inhibitors in cancer treatment. *International Journal of Molecular Sciences*, 24(15), 12133.
- Robertson, C. L., Srivastava, J., Siddiq, A., Gredler, R., Emdad, L., Rajasekaran, D., Akiel, M., Shen, X.-N., Guo, C., & Giashuddin, S. (2014). Genetic deletion of AEG-1 prevents hepatocarcinogenesis. *Cancer Research*, 74(21), 6184–6193.
- Sharma, P. (2016). Biology and management of patients with triple-negative breast cancer. *The Oncologist*, 21(9), 1050–1062.
- Shi, X., & Wang, X. (2015). The role of MTDH/AEG-1 in the progression of cancer. *International Journal of Clinical and Experimental Medicine*, 8(4), 4795.
- Song, H., Qin, Y., LI, C., Yao, G., Wang, S., & Geng, J. (2015). Study on the association between expression and clinicopathological significance of AEG-1 and MMP-9 in colorectal tissue. *Practical Oncology Journal*, 197–202.
- Song, H., Tian, Z., Qin, Y., Yao, G., Fu, S., & Geng, J. (2014). Astrocyte elevated gene-1 activates MMP9 to increase invasiveness of colorectal cancer. *Tumor Biology*, 35, 6679–6685.
- Song, L., Li, W., Zhang, H., Liao, W., Dai, T., Yu, C., Ding, X., Zhang, L., & Li, J. (2009). Over-expression of AEG-1 significantly associates with tumour aggressiveness and poor prognosis in human non-small cell lung cancer. *The Journal of Pathology: A Journal of the Pathological Society of Great Britain and Ireland*, 219(3), 317–326.
- Song, Z., Chang, Y., Jia, H., Xu, B., Yang, L., Xu, Y., Zhang, J., Wang, M., & Yang, L. (2022). *Metadherin inhibits triple-negative breast cancer chemosensitivity to paclitaxel via activation of the AKT/GSK-3β signaling pathway*.
- Sriramulu, S., Sun, X.-F., Malayaperumal, S., Ganesan, H., Zhang, H., Ramachandran, M., Banerjee, A., & Pathak, S. (2021). Emerging role and clinicopathological significance of AEG-1 in different cancer types: a concise review. *Cells*, 10(6), 1497.

- Srivastava, J., Siddiq, A., Emdad, L., Santhekadur, P. K., Chen, D., Gredler, R., Shen, X., Robertson, C. L., Dumur, C. I., & Hylemon, P. B. (2012). Astrocyte elevated gene-1 promotes hepatocarcinogenesis: novel insights from a mouse model. *Hepatology*, *56*(5), 1782–1791.
- Srivastava, J., Siddiq, A., Gredler, R., Shen, X., Rajasekaran, D., Robertson, C. L., Subler, M. A., Windle, J. J., Dumur, C. I., & Mukhopadhyay, N. D. (2015). Astrocyte elevated gene-1 and c-Myc cooperate to promote hepatocarcinogenesis in mice. *Hepatology*, *61*(3), 915–929.
- Sullu, Y., Demirag, G. G., Yildirim, A., Karagoz, F., & Kandemir, B. (2011). Matrix metalloproteinase-2 (MMP-2) and MMP-9 expression in invasive ductal carcinoma of the breast. *Pathology-Research and Practice*, *207*(12), 747–753.
- Sun, S., Ke, Z., Wang, F., Li, S., Chen, W., Han, A., Wang, Z., Shi, H., Wang, L., & Chen, X. (2012). Overexpression of astrocyte-elevated gene-1 is closely correlated with poor prognosis in human non-small cell lung cancer and mediates its metastasis through up-regulation of matrix metalloproteinase-9 expression. *Human Pathology*, *43*(7), 1051–1060.
- Tanaka, S., Sugimachi, K., Kameyama, T., Maehara, S., Shirabe, K., Shimada, M., Wands, J. R., & Maehara, Y. (2003). Human WISP1v, a member of the CCN family, is associated with invasive cholangiocarcinoma. *Hepatology*, *37*(5), 1122–1129.
- Verma, R., Jakhar, S. L., Sharma, N., Kumar, H. S., & Beniwal, S. (2021). Epidemiological Profile and Clinicopathological Correlates of Triple Negative Breast Cancer Patients at Regional Cancer Centre. *Asian Pacific Journal of Cancer Care*, *6*(4), 457–460.
- Wan, L., & Kang, Y. (2013). Pleiotropic roles of AEG-1/MTDH/LYRIC in breast cancer. *Advances in Cancer Research*, *120*, 113–134.
- Wang, C., & Yang, Q. (2011a). Astrocyte elevated gene-1 and breast cancer. *Oncology Letters*, *2*(3), 399–405.
- Wang, C., & Yang, Q. (2011b). Astrocyte elevated gene-1 and breast cancer. *Oncology Letters*, *2*(3), 399–405.
- Wang, C., & Yang, Q. (2011c). Astrocyte elevated gene-1 and breast cancer. *Oncology Letters*, *2*(3), 399–405.
- Won, K., & Spruck, C. (2020). Triple-negative breast cancer therapy: Current and future perspectives. *International Journal of Oncology*, *57*(6), 1245–1261.
- Wu, S., Yang, L., Wu, D., Gao, Z., Li, P., Huang, W., & Wang, X. (2017). AEG-1 induces gastric cancer metastasis by upregulation of eIF 4E expression. *Journal of Cellular and Molecular Medicine*, *21*(12), 3481–3493.
- Xiao, Y., Ma, D., Yang, Y.-S., Yang, F., Ding, J.-H., Gong, Y., Jiang, L., Ge, L.-P., Wu, S.-Y., & Yu, Q. (2022). Comprehensive metabolomics expands precision medicine for triple-negative breast cancer. *Cell Research*, *32*(5), 477–490.
- Ying, Z., Li, J., & Li, M. (2011). Astrocyte elevated gene 1: biological functions and molecular mechanism in cancer and beyond. *Cell & Bioscience*, *1*, 1–6.
- Yoo, B. K., Emdad, L., Lee, S.-G., Su, Z., Santhekadur, P., Chen, D., Gredler, R., Fisher, P. B., & Sarkar, D. (2011). Astrocyte elevated gene-1 (AEG-1): A multifunctional regulator of normal and abnormal physiology. *Pharmacology & Therapeutics*, *130*(1), 1–8.
- Yoo, B. K., Emdad, L., Su, Z., Villanueva, A., Chiang, D. Y., Mukhopadhyay, N. D., Mills, A. S., Waxman, S., Fisher, R. A., & Llovet, J. M. (2009). Astrocyte elevated gene-1 regulates hepatocellular carcinoma development and progression. *The Journal of Clinical Investigation*, *119*(3), 465–477.
- Yousef, E. M., Tahir, M. R., St-Pierre, Y., & Gaboury, L. A. (2014a). MMP-9 expression varies according to molecular subtypes of breast cancer. *BMC Cancer*, *14*(1), 1–12.
- Yousef, E. M., Tahir, M. R., St-Pierre, Y., & Gaboury, L. A. (2014b). MMP-9 expression varies according to molecular subtypes of breast cancer. *BMC Cancer*, *14*(1), 1–12.
- Zeng, Y., Liu, C., Dong, B., Li, Y., Jiang, B., Xu, Y., Meng, L., Wu, J., Qu, L., & Shou, C. (2013). Inverse correlation between Naa10p and MMP-9 expression and the combined prognostic value in breast cancer patients. *Medical Oncology*, *30*, 1–11.
- Zhang, H., Zhao, B., Zhai, Z.-G., Zheng, J.-D., Wang, Y.-K., & Zhao, Y.-Y. (2021). Expression and clinical significance of MMP-9 and P53 in lung cancer. *European Review for Medical & Pharmacological Sciences*, *25*(3).

