

## References

- Abou Khouzam, R., Lehn, J.-M., Mayr, H., Clavien, P.-A., Wallace, M. B., Ducreux, M., Limani, P., & Chouaib, S. (2023). Hypoxia, a targetable culprit to counter pancreatic cancer resistance to therapy. *Cancers*, 15(4), 1235. <https://doi.org/10.3390/cancers15041235>
- Ahmad, R. S., Eubank, T. D., Lukomski, S., & Boone, B. A. (2021). Immune cell modulation of the extracellular matrix contributes to the pathogenesis of pancreatic cancer. *Biomolecules*, 11(6), 901. <https://doi.org/10.3390/biom11060901>
- Ballehaninna, U. K., & Chamberlain, R. S. (2012). The clinical utility of serum CA 19-9 in the diagnosis, prognosis and management of pancreatic adenocarcinoma: An evidence based appraisal. *Journal of Gastrointestinal Oncology*, 3(2), 105–119. <https://doi.org/10.3978/j.issn.2078-6891.2011.021>
- Begliarzade, S., Beilerli, A., Sufianov, A., Tamrazov, R., Kudriashov, V., Ilyasova, T., Liang, Y., & Beylerli, O. (2023). Long non-coding RNAs as promising biomarkers and therapeutic targets in cervical cancer. *Non-Coding RNA Research*, 8(2), 233–239. <https://doi.org/10.1016/j.ncrna.2023.02.006>
- Bermejo-Rodriguez, C., Henríquez, J. A., Caligiuri, G., Teles, S. P., Park, Y., Evans, A., Barrera, L. N., Neesse, A., Grützmann, R., Aust, D., Rümmele, P., Knösel, T., Narita, M., Narita, M., Campbell, F., Öhlund, D., Pilarsky, C., Dow, L. E., Humbert, P. O., & Biffi, G. (2024). Scribble deficiency promotes pancreatic ductal adenocarcinoma development and metastasis. *Cancer Research*, 84(18), 2968–2984. <https://doi.org/10.1158/0008-5472.can-23-3419>
- Bhat, A. A., Afzal, M., Moglad, E., Thapa, R., Ali, H., Almalki, W. H., Kazmi, I., Alzarea, S. I., Gupta, G., & Subramaniyan, V. (2024). lncRNAs as prognostic markers and therapeutic targets in cuproptosis-mediated cancer. *Clinical and Experimental Medicine*, 24(1). <https://doi.org/10.1007/s10238-024-01491-0>

- Bodaghi, A., Fattahi, N., & Ramazani, A. (2023). Biomarkers: Promising and valuable tools towards diagnosis, prognosis and treatment of covid-19 and other diseases. *Heliyon*, 9(2), e13323. <https://doi.org/10.1016/j.heliyon.2023.e13323>
- Bulle, A., & Lim, K.-H. (2020). Beyond just a tight fortress: contribution of stroma to epithelial-mesenchymal transition in pancreatic cancer. *Signal Transduction and Targeted Therapy*, 5(1), 1–12. <https://doi.org/10.1038/s41392-020-00341-1>
- Chandana, S. R., Woods, L., Maxwell, F., Gandolfo, R., & Tanios Bekaii-Saab. (2024). Risk factors for early-onset pancreatic ductal adenocarcinoma: A systematic literature review. *European Journal of Cancer*, 198, 113471–113471. <https://doi.org/10.1016/j.ejca.2023.113471>
- Chen, H.-M., & MacDonald, J. A. (2021). Network analysis identifies DAPK3 as a potential biomarker for lymphatic invasion and colon adenocarcinoma prognosis. *IScience*, 24(8), 102831. <https://doi.org/10.1016/j.isci.2021.102831>
- Chen, Y., Li, Z., Chen, X., & Zhang, S. (2021). Long non-coding RNAs: From disease code to drug role. *Acta Pharmaceutica Sinica B*, 11(2), 340–354. <https://doi.org/10.1016/j.apsb.2020.10.001>
- Chen, Z., Hu, Z., Sui, Q., Huang, Y., Zhao, M., Li, M., Liang, J., Lu, T., Zhan, C., Lin, Z., Sun, F., Wang, Q., & Tan, L. (2022). LncRNA FAM83A-AS1 facilitates tumor proliferation and the migration via the hif-1 $\alpha$ / glycolysis axis in lung adenocarcinoma. *International Journal of Biological Sciences*, 18(2), 522–535. <https://doi.org/10.7150/ijbs.67556>
- Cheng, J.-T., Wang, L., Wang, H., Tang, F.-R., Cai, W.-Q., Sethi, G., Xin, H.-W., & Ma, Z. (2019). Insights into biological role of lncRNAs in epithelial-mesenchymal transition. *Cells*, 8(10), 1178. <https://doi.org/10.3390/cells8101178>
- Cui, S.-J., Tang, T.-Y., Zou, X.-W., Su, Q.-M., Feng, L., & Gong, X.-Y. (2020). Role of imaging biomarkers for prognostic prediction in patients with pancreatic ductal adenocarcinoma. *Clinical Radiology*, 75(6), 478.e1–478.e11. <https://doi.org/10.1016/j.crad.2019.12.023>
- Detlefsen, S., Boldt, H. B., Burton, M., Thomsen, M. M., Rasmussen, L. G., Ørbeck, S. V., Pfeiffer, P., Mortensen, M. B., & Stricker, K. de. (2023). High overall copy number variation burden by

- genome-wide methylation profiling holds negative prognostic value in surgically treated pancreatic ductal adenocarcinoma. *Human Pathology*, 142, 68–80.  
<https://doi.org/10.1016/j.humpath.2023.11.002>
- El-Helkan, B., Emam, M., Mohanad, M., Fathy, S., Zekri, A. R., & Ahmed, O. S. (2022). Long non-coding RNAs as novel prognostic biomarkers for breast cancer in Egyptian women. *Scientific Reports*, 12(1). <https://doi.org/10.1038/s41598-022-23938-8>
- Ghafouri-Fard, S., & Taheri, M. (2019). Maternally expressed gene 3 (MEG3): A tumor suppressor long non coding RNA. *Biomedicine & Pharmacotherapy*, 118, 109129.  
<https://doi.org/10.1016/j.biopha.2019.109129>
- Gu, X., & Minko, T. (2024). Targeted nanoparticle-based diagnostic and treatment options for pancreatic cancer. *Cancers*, 16(8), 1589–1589. <https://doi.org/10.3390/cancers16081589>
- Guo, S., Zhu, X., Huang, Z., Wei, C., Yu, J., Zhang, L., Feng, J., Li, M., & Li, Z. (2023). Genomic instability drives tumorigenesis and metastasis and its implications for cancer therapy. *Biomedicine & Pharmacotherapy*, 157, 114036. <https://doi.org/10.1016/j.biopha.2022.114036>
- Guzel, E., Okyay, T. M., Yalcinkaya, B., Karacaoglu, S., Gocmen, M., & Akcakuyu, M. H. (2019). Tumor suppressor and oncogenic role of long non-coding rnas in cancer. *Northern Clinics of Istanbul*, 7(1), 81–86. <https://doi.org/10.14744/nci.2019.46873>
- Hackner, D., Merkel, S., Weiß, A., Krautz, C., Weber, G. F., Grützmann, R., & Brunner, M. (2024). Neutrophil-to-Lymphocyte ratio and prognostic nutritional index are predictors for overall survival after primary pancreatic resection of pancreatic ductal adenocarcinoma: A single centre evaluation. *Cancers*, 16(16), 2911. <https://doi.org/10.3390/cancers16162911>
- He, X., Cai, L., Tang, H., Chen, W., & Hu, W. (2023). Epigenetic modifications in radiation-induced non-targeted effects and their clinical significance. *Biochimica et Biophysica Acta (BBA) - General Subjects*, 1867(8), 130386. <https://doi.org/10.1016/j.bbagen.2023.130386>

- Hosea, R., Hillary, S., Naqvi, S., Wu, S., & Kasim, V. (2024). The two sides of chromosomal instability: Drivers and brakes in cancer. *Signal Transduction and Targeted Therapy*, 9(1).  
<https://doi.org/10.1038/s41392-024-01767-7>
- Hu, H., Xu, H., Lu, F., Zhang, J., Xu, L., Xu, S., Jiang, H., Zeng, Q., Chen, E., & He, Z. (2021). Exploring the effect of differentially expressed long non-coding RNAs driven by copy number variation on competing endogenous RNA network by mining lung adenocarcinoma data. *Frontiers in Cell and Developmental Biology*, 8. <https://doi.org/10.3389/fcell.2020.627436>
- Huang, S., Peng, X., Jiang, L., Ching Yuan Hu, & Ye, W.-C. (2021). LncRNAs as therapeutic targets and potential biomarkers for lipid-related diseases. *Frontiers in Pharmacology*, 12.  
<https://doi.org/10.3389/fphar.2021.729745>
- Hyun, S., & Park, D. (2022). Challenges in genomic analysis of model systems and primary tumors of pancreatic ductal adenocarcinoma. *Computational and Structural Biotechnology Journal*, 20, 4806–4815. <https://doi.org/10.1016/j.csbj.2022.08.064>
- Jai, M., & Mozdziak, P. E. (2024). Genetics and biology of pancreatic ductal adenocarcinoma. *Medical Journal of Cell Biology*, 12(2), 42–47. <https://doi.org/10.2478/acb-2024-0006>
- Jain, A., & Bhardwaj, V. (2021). Therapeutic resistance in pancreatic ductal adenocarcinoma: Current challenges and future opportunities. *World Journal of Gastroenterology*, 27(39), 6527–6550.  
<https://doi.org/10.3748/wjg.v27.i39.6527>
- Jamalzadeh, S., Dai, J., Lavikka, K., Li, Y., Jiang, J., Huhtinen, K., Virtanen, A., Oikonen, J., Hietanen, S., Hynninen, J., Vähärautio, A., Häkkinen, A., & Hautaniemi, S. (2024). Genome-wide quantification of copy-number aberration impact on gene expression in ovarian high-grade serous carcinoma. *BMC Cancer*, 24(1). <https://doi.org/10.1186/s12885-024-11895-6>
- Jin, T. Y., Park, K. S., Nam, S. E., Yoo, Y. B., Park, W. S., & Yun, I. J. (2022). BRCA1/2 serves as a biomarker for poor prognosis in breast carcinoma. *International Journal of Molecular Sciences*, 23(7), 3754. <https://doi.org/10.3390/ijms23073754>

- Latenstein, A. E. J., Geest, L. G. M. van der, Bonsing, B. A., Koerkamp, B. G., Mohammad, N. H., Hingh, I. H. J. T. de, Meijer, V. E. de, Molenaar, I. Q., Santvoort, H. C. van, Tienhoven, G. van, Verheij, J., Vissers, P. A. J., Vos-Geelen, J. de, Busch, O. R., Eijck, C. H. J. van, Laarhoven, H. W. M. van, Besselink, M. G., & Wilmink, J. W. (2020). Nationwide trends in incidence, treatment and survival of pancreatic ductal adenocarcinoma. *European Journal of Cancer*, 125, 83–93.  
<https://doi.org/10.1016/j.ejca.2019.11.002>
- Lee, J.-S., Oh, S.-J., Choi, H.-J., Kang, J. H., Lee, S.-H., Ha, J. S., Woo, S. M., Jang, H., Lee, H., & Kim, S.-Y. (2020). ATP production relies on fatty acid oxidation rather than glycolysis in pancreatic ductal adenocarcinoma. *Cancers*, 12(9), 2477. <https://doi.org/10.3390/cancers12092477>
- Li, Q., Feng, Z., Miao, R., Liu, X., Liu, C., & Liu, Z. (2022). Prognosis and survival analysis of patients with pancreatic cancer: Retrospective experience of a single institution. *World Journal of Surgical Oncology*, 20(1). <https://doi.org/10.1186/s12957-021-02478-x>
- Li, R., Wang, X., Zhu, C., & Wang, K. (2022). LncRNA PVT1: A novel oncogene in multiple cancers. *Cellular & Molecular Biology Letters*, 27(1). <https://doi.org/10.1186/s11658-022-00385-x>
- Li, S., Chen, S., Wang, B., Zhang, L., Su, Y., & Zhang, X. (2020). A robust 6-lncRNA prognostic signature for predicting the prognosis of patients with colorectal cancer metastasis. *Frontiers in Medicine*, 7. <https://doi.org/10.3389/fmed.2020.00056>
- Li, Y. (2023). Non-Coding RNA performs its biological function by interacting with macromolecules. *International Journal of Molecular Sciences*, 24(22), 16246–16246.  
<https://doi.org/10.3390/ijms242216246>
- Liu, H., Gu, X., Wang, G., Huang, Y., Ju, S., Huang, J., & Wang, X. (2019). Copy number variations primed lncRNAs deregulation contribute to poor prognosis in colorectal cancer. *Aging*, 11(16), 6089–6108. <https://doi.org/10.18632/aging.102168>
- Liu, T., Liu, Y., Su, X., Peng, L., Chen, J., Xing, P., Qiao, X., Wang, Z., Di, J., Zhao, M., Jiang, B., & Qu, H. (2023). Genome-wide transcriptomics and copy number profiling identify patient-specific

- cnv-lncrna-mrna regulatory triplets in colorectal cancer. *Computers in Biology and Medicine*, 153, 106545. <https://doi.org/10.1016/j.compbiomed.2023.106545>
- Liu, X., Wang, W., Liu, X., Zhang, Z., Yu, L., Li, R., Guo, D., Cai, W., Quan, X., Wu, H., Dai, M., & Liang, Z. (2022). Multi-omics analysis of intra-tumoural and inter-tumoural heterogeneity in pancreatic ductal adenocarcinoma. *Clinical and Translational Medicine*, 12(1). <https://doi.org/10.1002/ctm2.670>
- Liu, Y., Tang, T., Yang, X., Qin, P., Wang, P., Zhang, H., Bai, M., Wu, R., & Li, F. (2021). Tumor-derived exosomal long noncoding RNA LINC01133, regulated by periostin, contributes to pancreatic ductal adenocarcinoma epithelial-mesenchymal transition through the wnt/ $\beta$ -catenin pathway by silencing AXIN2. *Oncogene*, 40(17), 3164–3179. <https://doi.org/10.1038/s41388-021-01762-0>
- Logan, K., Pearson, F., Kenny, R. P.W., Pandanaboyana, S., & Sharp, L. (2022). Are older patients less likely to be treated for pancreatic cancer? A systematic review and meta-analysis. *Cancer Epidemiology*, 80, 102215. <https://doi.org/10.1016/j.canep.2022.102215>
- Lu, T., Wei, G. H., Wang, J., & Shen, J. (2020). LncRNA CASC19 contributed to the progression of pancreatic cancer through modulating miR-148b/E2F7 axis. *DOAJ (DOAJ: Directory European Review for Medical and Pharmacological Sciences of Open Access Journals)*, 24(20). [https://doi.org/10.26355/eurrev\\_202010\\_23399](https://doi.org/10.26355/eurrev_202010_23399)
- Mallory, X. F., Edrisi, M., Navin, N., & Nakhleh, L. (2020). Methods for copy number aberration detection from single-cell DNA-sequencing data. *Genome Biology*, 21(1). <https://doi.org/10.1186/s13059-020-02119-8>
- Masrour, M., Khanmohammadi, S., Fallahtafti, P., Hashemi, S. M., & Rezaei, N. (2024). Long non-coding RNA as a potential diagnostic and prognostic biomarker in melanoma: A systematic review and meta-analysis. *Journal of Cellular and Molecular Medicine*, 28(3). <https://doi.org/10.1111/jcmm.18109>

- Mattick, J. S., Amaral, P. P., Carninci, P., Carpenter, S., Chang, H. Y., Chen, L.-L., Chen, R., Dean, C., Dinger, M. E., Fitzgerald, K. A., Gingeras, T. R., Guttman, M., Hirose, T., Huarte, M., Johnson, R., Kanduri, C., Kapranov, P., Lawrence, J. B., Lee, J. T., & Mendell, J. T. (2023). Long non-coding rnas: Definitions, functions, challenges and recommendations. *Nature Reviews Molecular Cell Biology*, 24. <https://doi.org/10.1038/s41580-022-00566-8>
- McCubrey, J. A., Meher, A. K., Akula, S. M., Abrams, S. L., Steelman, L. S., LaHair, M. M., Franklin, R. A., Martelli, A. M., Ratti, S., Cocco, L., Barbaro, F., Duda, P., & Gizak, A. (2022). Wild type and gain of function mutant TP53 can regulate the sensitivity of pancreatic cancer cells to chemotherapeutic drugs, egfr/ras/raf/mek, and pi3k/mtorc1/gsk-3 pathway inhibitors, nutraceuticals and alter metabolic properties. *Aging*, 14(8), 3365–3386. <https://doi.org/10.18632/aging.204038>
- Melus, C., Rossin, B., Aure, M. A., & Mahler, M. (2021). Biomarker and data science as integral part of precision medicine. In M. Mahler (Ed.), *Precision Medicine and Artificial Intelligence: The Perfect Fit for Autoimmunity* (pp. 65–96). Academic Press. <https://doi.org/10.1016/B978-0-12-820239-5.00006-1>
- Mermel, C. H., Schumacher, S. E., Hill, B., Meyerson, M. L., Beroukhim, R., & Getz, G. (2011). GISTIC2.0 facilitates sensitive and confident localization of the targets of focal somatic copy-number alteration in human cancers. *Genome Biology*, 12(4). <https://doi.org/10.1186/gb-2011-12-4-r41>
- Mortoglou, M., Tabin, Z. K., Arisan, E. D., Kocher, H. M., & Uysal-Onganer, P. (2021). Non-coding RNAs in pancreatic ductal adenocarcinoma: New approaches for better diagnosis and therapy. *Translational Oncology*, 14(7), 101090. <https://doi.org/10.1016/j.tranon.2021.101090>
- Mukund, A., Afridi, M. A., Karolak, A., Park, M. A., Permuth, J. B., & Rasool, G. (2024). Pancreatic ductal adenocarcinoma (PDAC): A review of recent advancements enabled by artificial intelligence. *Cancers*, 16(12), 2240. <https://doi.org/10.3390/cancers16122240>

- Nabavi, S., & Zare, F. (2022). Identification of copy number alterations from next-generation sequencing data. In A. Laganà (Ed.), *Computational Methods for Precision Oncology* (pp. 55–74). Springer Cham. [https://doi.org/10.1007/978-3-030-91836-1\\_4](https://doi.org/10.1007/978-3-030-91836-1_4)
- Nakahashi, H., Oda, T., Shimomura, O., Akashi, Y., Takahashi, K., Miyazaki, Y., Furuta, T., Kuroda, Y., Louphrasitthiphol, P., Mathis, B. J., & Tateno, H. (2024). Aberrant glycosylation in pancreatic ductal adenocarcinoma 3D organoids is mediated by KRAS mutations. *Journal of Oncology*, 1529449. <https://doi.org/10.1155/2024/1529449>
- Ning, J., Wang, F., Zhu, K., Li, B., Shu, Q., & Liu, W. (2021). Characterizing the copy number variation of non-coding RNAs reveals potential therapeutic targets and prognostic markers of LUSC. *Frontiers in Genetics*, 12. <https://doi.org/10.3389/fgene.2021.779155>
- Oketch, D. J. A., Giulietti, M., & Piva, F. (2024). Copy number variations in pancreatic cancer: From biological significance to clinical utility. *International Journal of Molecular Sciences*, 25(1), 391. <https://doi.org/10.3390/ijms25010391>
- Park, W., Chawla, A., & O'Reilly, E. M. (2021). Pancreatic cancer. *Journal of the American Medical Association*, 326(9), 851–862. <https://doi.org/10.1001/jama.2021.13027>
- Passaro, A., Al Bakir, M., Hamilton, E. G., Diehn, M., André, F., Roy-Chowdhuri, S., Mountzios, G., Wistuba, I. I., Swanton, C., & Peters, S. (2024). Cancer biomarkers: Emerging trends and clinical implications for personalized treatment. *Cell (Cambridge)*, 187(7), 1617–1635. <https://doi.org/10.1016/j.cell.2024.02.041>
- Pienkowski, T., Katarzyna Wawrzak-Pienkowska, Tankiewicz-Kwedlo, A., Ciborowski, M., Kurek, K., & Pawlak, D. (2025). Leveraging glycosylation for early detection and therapeutic target discovery in pancreatic cancer. *Cell Death and Disease*, 16(1). <https://doi.org/10.1038/s41419-025-07517-z>
- Pierce, J. B., Zhou, H., Simion, V., & Feinberg, M. W. (2022). Long Noncoding RNAs as Therapeutic Targets. In S. Carpenter (Ed.), *Long Noncoding RNA: Mechanistic Insights and Roles in*

- Inflammation* (pp. 161–175). Springer International Publishing. [https://doi.org/10.1007/978-3-030-92034-0\\_9](https://doi.org/10.1007/978-3-030-92034-0_9)
- Principe, D. R., Underwood, P. W., Korc, M., Trevino, J. G., Munshi, H. G., & Rana, A. (2021). The current treatment paradigm for pancreatic ductal adenocarcinoma and barriers to therapeutic efficacy. *Frontiers in Oncology*, 11. <https://doi.org/10.3389/fonc.2021.688377>
- Rayi, A., & Hozayen, S. (2022). Chromosome instability syndromes. In *StatPearls*. StatPearls Publishing. <https://pubmed.ncbi.nlm.nih.gov/30725883/>
- Reich, M., Liefeld, T., Gould, J., Lerner, J., Tamayo, P., & Mesirov, J. P. (2006). GenePattern 2.0. *Nature Genetics*, 38(5), 500–501. <https://doi.org/10.1038/ng0506-500>
- Rubtsova, S. N., Zhitnyak, I. Y., & Gloushankova, N. A. (2021). Dual role of E-cadherin in cancer cells. *Tissue Barriers*, 10(4). <https://doi.org/10.1080/21688370.2021.2005420>
- Sadozai, H., Acharjee, A., Kayani, H. Z., Gruber, T., Gorczynski, R. M., & Burke, B. (2024). High hypoxia status in pancreatic cancer is associated with multiple hallmarks of an immunosuppressive tumor microenvironment. *Frontiers in Immunology*, 15, 1360629. <https://doi.org/10.3389/fimmu.2024.1360629>
- Sarantis, P., Koustas, E., Papadimitropoulou, A., Papavassiliou, A. G., & Karamouzis, M. V. (2020). Pancreatic ductal adenocarcinoma: Treatment hurdles, tumor microenvironment and immunotherapy. *World Journal of Gastrointestinal Oncology*, 12(2), 173–181. <https://doi.org/10.4251/wjgo.v12.i2.173>
- Serrano-Gomez, S. J., Maziveyi, M., & Alahari, S. K. (2016). Regulation of epithelial-mesenchymal transition through epigenetic and post-translational modifications. *Molecular Cancer*, 15(1). <https://doi.org/10.1186/s12943-016-0502-x>
- Siegel, R. L., Miller, K. D., Fuchs, H. E., & Jemal, A. (2021). Cancer Statistics, 2021. *CA: A Cancer Journal for Clinicians*, 71(1), 7–33. <https://doi.org/10.3322/caac.21654>

- Siri, S. O., Martino, J., & Gottifredi, V. (2021). Structural chromosome instability: Types, origins, consequences, and therapeutic opportunities. *Cancers*, 13(12), 3056.  
<https://doi.org/10.3390/cancers13123056>
- Steele, C. D., Abbasi, A., Islam, S. M. A., Bowes, A. L., Khandekar, A., Haase, K., Hames-Fathi, S., Ajayi, D., Verfaillie, A., Dhami, P., McLatchie, A., Lechner, M., Light, N., Shlien, A., Malkin, D., Feber, A., Proszek, P., Lesluyes, T., Mertens, F., & Flanagan, A. M. (2022). Signatures of copy number alterations in human cancer. *Nature*, 606(7916), 984–991. <https://doi.org/10.1038/s41586-022-04738-6>
- Takesue, S., Ohuchida, K., Shinkawa, T., Otsubo, Y., Matsumoto, S., Sagara, A., Yonenaga, A., Ando, Y., Kibe, S., Nakayama, H., Iwamoto, C., Shindo, K., Moriyama, T., Nakata, K., Miyasaka, Y., Ohtsuka, T., Toma, H., Tominaga, Y., Mizumoto, K., & Hashizume, M. (2019). Neutrophil extracellular traps promote liver micrometastasis in pancreatic ductal adenocarcinoma via the activation of cancer-associated fibroblasts. *International Journal of Oncology*, 56(2).  
<https://doi.org/10.3892/ijo.2019.4951>
- Tal Koffler-Brill, Noy, Y., & Avraham, K. B. (2023). The long and short: Non-coding RNAs in the mammalian inner ear. *Hearing Research*, 428, 108666–108666.  
<https://doi.org/10.1016/j.heares.2022.108666>
- Thean, L. F., Blöcker, C., Li, H. H., Lo, M., Wong, M., Tang, C. L., Tan, E. K. W., Rozen, S. G., & Cheah, P. Y. (2021). Enhancer-derived long non-coding RNAs CCAT1 and CCAT2 at rs6983267 has limited predictability for early-stage colorectal carcinoma metastasis. *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-020-79906-7>
- Trombettoni, E. (2022, September 1). *Clinical trials, how biomarkers help research*. Meditrial.  
<https://www.meditrial.net/2022/09/clinical-trials-how-biomarkers-help-research/>
- Tseng, Y.-Y., Moriarity, B. S., Gong, W., Akiyama, R., Tiwari, A., Kawakami, H., Ronning, P., Reuland, B., Guenther, K., Beadnell, T. C., Essig, J., Otto, G. M., O’Sullivan, M. G., Largaespada, D. A., Schwertfeger, K. L., Marahrens, Y., Kawakami, Y., & Bagchi, A. (2014). PVT1 dependence in

- cancer with MYC copy-number increase. *Nature*, 512(7512), 82–86.  
<https://doi.org/10.1038/nature13311>
- Tsimberidou, A. M., Fountzilas, E., Bleris, L., & Kurzrock, R. (2020). Transcriptomics and solid tumors: The next frontier in precision cancer medicine. *Seminars in Cancer Biology*, 84.  
<https://doi.org/10.1016/j.semcancer.2020.09.007>
- Underwood, P. W., Herremans, K. M., Neal, D., Riner, A. N., Nassour, I., Hughes, S. J., & Trevino, J. G. (2023). Changing practice patterns and improving survival for patients with pancreatic ductal adenocarcinoma. *Cancers*, 15(18), 4464–4464. <https://doi.org/10.3390/cancers15184464>
- Usman, O. H., Zhang, L., Xie, G., Kocher, H. M., Hwang, C., Wang, Y. J., Mallory, X., & Irianto, J. (2022). Genomic heterogeneity in pancreatic cancer organoids and its stability with culture. *NPJ Genomic Medicine*, 7(1). <https://doi.org/10.1038/s41525-022-00342-9>
- van Dongen, J. C., van der Geest, L. G. M., de Meijer, V. E., van Santvoort, H. C., de Vos-Geelen, J., Besselink, M. G., Groot Koerkamp, B., Wilmink, J. W., & van Eijck, C. H. J. (2021). Age and prognosis in patients with pancreatic cancer: A population-based study. *Acta Oncologica*, 61(3), 286–293. <https://doi.org/10.1080/0284186x.2021.2016949>
- Wan, L., Lin, K.-T., Rahman, M. A., Ishigami, Y., Wang, Z., Jensen, M. A., Wilkinson, J. E., Park, Y., Tuveson, D. A., & Krainer, A. R. (2023). Splicing factor SRSF1 promotes pancreatitis and krasg12d-mediated pancreatic cancer. *Cancer Discovery*, 13(7), 1678–1695.  
<https://doi.org/10.1158/2159-8290.cd-22-1013>
- Wang, B., Wu, L., Chen, J., Dong, L., Chen, C., Wen, Z., Hu, J., Fleming, I., & Wang, D. W. (2021). Metabolism pathways of arachidonic acids: mechanisms and potential therapeutic targets. *Signal Transduction and Targeted Therapy*, 6(1). <https://doi.org/10.1038/s41392-020-00443-w>
- Wang, D., & Farhana, A. (2023, July 29). *Biochemistry, RNA Structure*. PubMed; StatPearls Publishing.  
<https://www.ncbi.nlm.nih.gov/books/NBK558999/>

- Wang, H., Liu, J., Xia, G., Lei, S., Huang, X., & Huang, X. (2020). Survival of pancreatic cancer patients is negatively correlated with age at diagnosis: A population-based retrospective study. *Scientific Reports*, 10(1). <https://doi.org/10.1038/s41598-020-64068-3>
- Wang, Y., Yang, Y., Wang, Y., Li, X., Xiao, Y., & Wang, W. (2020). High cancer susceptibility candidate 8 expression is associated with poor prognosis of pancreatic adenocarcinoma: Validated analysis based on four cancer databases. *Frontiers in Cell and Developmental Biology*, 8. <https://doi.org/10.3389/fcell.2020.00392>
- Wang, Y., Zhong, X., Zhou, L., Lu, J., Jiang, B., Liu, C., & Guo, J. (2020). Prognostic biomarkers for pancreatic ductal adenocarcinoma: An umbrella review. *Frontiers in Oncology*, 10, 1466. <https://doi.org/10.3389/fonc.2020.01466>
- Wang, Z., Han, H., Zhang, C., Wu, C., Di, J., Xing, P., Qiao, X., Weng, K., Hao, H., Yang, X., Hou, Y., Jiang, B., & Su, X. (2024). Copy number amplification-induced overexpression of lncRNA LOC101927668 facilitates colorectal cancer progression by recruiting hnRNP D to disrupt rbm47/p53/p21 signaling. *Journal of Experimental & Clinical Cancer Research*, 43(1). <https://doi.org/10.1186/s13046-024-03193-7>
- Witkiewicz, A. K., McMillan, E. A., Balaji, U., Baek, G., Lin, W.-C., Mansour, J., Mollaee, M., Wagner, K.-U., Koduru, P., Yopp, A., Choti, M. A., Yeo, C. J., McCue, P., White, M. A., & Knudsen, E. S. (2015). Whole-exome sequencing of pancreatic cancer defines genetic diversity and therapeutic targets. *Nature Communications*, 6(1), 6744. <https://doi.org/10.1038/ncomms7744>
- Wu, Q., Chen, L., Miao, D., Jin, Y., & Zhu, Z. (2022). Prognostic signature based on m6A-related lncRNAs to predict overall survival in pancreatic ductal adenocarcinoma. *Scientific Reports*, 12(1). <https://doi.org/10.1038/s41598-022-07112-8>
- Xu, B., Mei, J., Ji, W., Bian, Z., Jiao, J., Sun, J., & Shao, J. (2020). lncRNA SNHG3, a potential oncogene in human cancers. *Cancer Cell International*, 20(1). <https://doi.org/10.1186/s12935-020-01608-x>

- Yang, H., Zhang, W., Ding, J., Hu, J., Sun, Y., Peng, W., Chu, Y., Xie, L., Mei, Z., Shao, Z., & Xiao, Y. (2022). A novel genomic instability-derived lncRNA signature to predict prognosis and immune characteristics of pancreatic ductal adenocarcinoma. *Frontiers in Immunology*, 13. <https://doi.org/10.3389/fimmu.2022.970588>
- Yang, J., Qian, X., Qiu, Q., Xu, L., Pan, M., Li, J., Ren, J., Lu, B., Qiu, T., Chen, E., Ying, K., Zhang, H., Lu, Y., & Liu, P. (2022). LCAT1 is an oncogenic lncRNA by stabilizing the IGF2BP2-CDC6 axis. *Cell Death & Disease*, 13(10). <https://doi.org/10.1038/s41419-022-05316-4>
- Yang, J., Xu, R., Wang, C., Qiu, J., Ren, B., & You, L. (2021). Early screening and diagnosis strategies of pancreatic cancer: A comprehensive review. *Cancer Communications*, 41(12). <https://doi.org/10.1002/cac2.12204>
- Yogi, N., Usui, G., Matsusaka, K., Fukuyo, M., Fujiki, R., Seki, M., Takano, S., Abe, H., Morikawa, T., Ushiku, T., Ohtsuka, M., & Kaneda, A. (2022). Association of tumors having Epstein–Barr virus in surrounding lymphocytes with poor prognosis. *Cancer Medicine*, 12(2), 1122–1136. <https://doi.org/10.1002/cam4.4967>
- Yu, J. (2016). DNA damage repair and TP53 gene in platinum-drug resistance. *International Journal of Clinical Pharmacology & Pharmacotherapy*, 1(2). <https://doi.org/10.15344/2456-3501/2016/121>
- Zaccaria, S., & Raphael, B. J. (2020). Accurate quantification of copy-number aberrations and whole-genome duplications in multi-sample tumor sequencing data. *Nature Communications*, 11(1). <https://doi.org/10.1038/s41467-020-17967-y>
- Zhang, C., Shen, Q., Liu, F., Yang, F., Gao, M., Jiang, X., Li, Y., Zhang, X., En, G., Pan, X., & Pang, B. (2023). SDC1 and ITGA2 as novel prognostic biomarkers for PDAC related to IPMN. *Scientific Reports*, 13(1). <https://doi.org/10.1038/s41598-023-44646-x>
- Zhang, F., Gu, W., Hurles, M. E., & Lupski, J. R. (2009). Copy number variation in human health, disease, and evolution. *Annual Review of Genomics and Human Genetics*, 10(1), 451–481. <https://doi.org/10.1146/annurev.genom.9.081307.164217>

- Zhang, G., Li, B., Yin, X., Gao, S., Shen, S., Wang, H., Shi, X., Liu, W., Zheng, K., Jing, W., Zhang, Y., He, T., Li, G., Hu, X., Guo, S., & Jin, G. (2022). Systemic therapy and perioperative management improve the prognosis of pancreatic ductal adenocarcinoma: A retrospective cohort study of 2000 consecutive cases. *International Journal of Surgery*, 104, 106786–106786. <https://doi.org/10.1016/j.ijssu.2022.106786>
- Zhang, J., Ding, N., He, Y., Tao, C., Liang, Z., Xin, W., Zhang, Q., & Wang, F. (2021). Bioinformatic identification of genomic instability-associated lncRNAs signatures for improving the clinical outcome of cervical cancer by a prognostic model. *Scientific Reports*, 11(1). <https://doi.org/10.1038/s41598-021-00384-6>
- Zhang, L., Sanagapalli, S., & Stoita, A. (2018). Challenges in diagnosis of pancreatic cancer. *World Journal of Gastroenterology*, 24(19), 2047–2060. <https://doi.org/10.3748/wjg.v24.i19.2047>
- Zhang, X., & Kschischo, M. (2022). Distinct and common features of numerical and structural chromosomal instability across different cancer types. *Cancers*, 14(6), 1424. <https://doi.org/10.3390/cancers14061424>
- Zhao, Z., Luo, Q., Liu, Y., Jiang, K., Zhou, L., Dai, R., & Han, W. (2023). Multi-level integrative analysis of the roles of lncRNAs and differential mRNAs in the progression of chronic pancreatitis to pancreatic ductal adenocarcinoma. *BMC Genomics*, 24(1). <https://doi.org/10.1186/s12864-023-09209-4>
- Zheng, C., Wang, J., Wang, J., Zhang, Q., & Liang, T. (2024). Cell of origin of pancreatic cancer: Novel findings and current understanding. *Pancreas*, 53(3), e288. <https://doi.org/10.1097/MPA.0000000000002301>
- Zhong, Q., Lu, M., Yuan, W., Cui, Y., Ouyang, H., Fan, Y., Wang, Z., Wu, C., Qiao, J., & Hang, J. (2021). Eight-lncRNA signature of cervical cancer were identified by integrating DNA methylation, copy number variation and transcriptome data. *Journal of Translational Medicine*, 19(1). <https://doi.org/10.1186/s12967-021-02705-9>

- Zhong, W., Wang, D., Yao, B., Chen, X., Wang, Z., Qu, H., Ma, B., Ye, L., & Qiu, J. (2021). Integrative analysis of prognostic long non-coding RNAs with copy number variation in bladder cancer. *Journal of Zhejiang University-SCIENCE B*, 22(8), 664–681.  
<https://doi.org/10.1631/jzus.b2000494>
- Zhu, S., Pabla, N., Tang, C., He, L., & Dong, Z. (2015). DNA damage response in cisplatin-induced nephrotoxicity. *Archives of Toxicology*, 89(12), 2197–2205. <https://doi.org/10.1007/s00204-015-1633-3>
- Zoccali, C., Tripepi, G., Stel, V., Fu, E. L., Mallamaci, F., Dekker, F., & Jager, K. J. (2024). Biomarkers in clinical epidemiology studies. *Clinical Kidney Journal*, 17(6).  
<https://doi.org/10.1093/ckj/sfae130>