

REFERENCES

References

- Aboofazeli R. (2010). Carbon Nanotubes: a Promising Approach for Drug Delivery. Iran J Pharm Res. 9(1): 1–3. PMCID: PMC3869555.
- Agarwal T (2009). Concentration level, pattern and toxic potential of PAHs in traffic soil of Delhi, India. Journal of Hazardous Materials 171.doi:10.1016/j.jhazmat.2009.06.081.
- Alon A., Grossman I., Gat Y., Kodali V.K., DiMaio F., Mehlman T., Haran G., Baker D., Thorpe C., Fass D. (2012). The dynamic disulphide relay of quiescinsulphydryl oxidase. Nature 488:414-418. PubMed:22801504.
- Alsaqour RA., Abdelhaq MS., Alsukour OA. (2012) Effect of network parameters on neighbor wireless link breaks in GPSR protocol and enhancement using mobility prediction model. EURASIP Journal on Wireless Communications and Networking 2012, 2012:171 <http://jwcn.eurasipjournals.com/content/2012/1/171>.
- Ambs S and Glynn SA., (2011) Candidate pathways linking inducible nitric oxide synthase to a basal-like transcription pattern and tumor progression in human breast cancer. Cell Cycle. 10(4): 619–624. doi: 10.4161/cc.10.4.14864. PMCID: PMC3043082.

Andorf, C. M., Honavar, V. & Sen, T. Z. (2013). Predicting the Binding Patterns of Hub Proteins: A Study Using Yeast Protein Interaction Networks. *PLoS One*. 8(2), e56833.

Antoniou IE and Tsompa ET., (2008) Statistical Analysis of Weighted Networks. *Discrete Dynamics in Nature and Society*. Volume 2008. Article ID 375452. <https://doi.org/10.1155/2008/375452>.

Anukriti, Dhasmana A., Uniyal S., Somvanshi P., Bhardwaj U., Gupta M., Haque S., Lohani M., Kumar D., Ruokolainen J., Kesari KK., (2019) Investigation of Precise Molecular Mechanistic Action of Tobacco-Associated Carcinogen ‘NNK’ Induced Carcinogenesis: A System Biology Approach. *Genes*, 10, 564; doi:10.3390/genes10080564. PMCID: PMC6723528.

Arora D, and Singh A., (2018) Systems biology approach deciphering the biochemical signaling pathway and pharmacokinetic study of PI3K/mTOR/p53-Mdm2 module involved in neoplastic transformation. *Network Modeling Analysis in Health Informatics and Bioinformatics* 7:2. <https://doi.org/10.1007/s13721-017-0162-9>.

Babu, M. M., Luscombe, N. M., Aravind, L., Gerstein, M., & Teichmann, S. A. (2004). Structure and evolution of transcriptional regulatory networks. *Current opinion in structural biology*, 14, 283 –291.

Bader GD and Hogue CWV., (2003) An automated method for finding molecular complexes in large protein interaction network. *BMC Bioinformatics*. 4: 2. doi: 10.1186/1471-2105-4-2. PMCID: PMC149346.

Bakry R., Vallant RM., Najam-Ul-Haq M., Rainer M., Szabo Z., Huck CW., Bonn GK.(2007) Medicinal applications of fullerenes. *Int J Nanomedicine*; 2(4): 639–649. PMCID: PMC2676811.

Baldi A., Santani D., Vasaturo F., Santini M., Vicedomini G., Di M., Esposito V., Groeger A., Liuzzi G., Vincenzi B., Tonini G., Piccoli M., Baldi F., Scarpa S. (2004). Prognostic significance of cyclooxygenase-2 (COX-2) and expression of cell cycle inhibitors p21 and p27 in human pleural malignant mesothelioma. *Thorax*;59:428–433. doi: 10.1136/thx.2003.008912.

Barabasi AL and Albert R., (1999) Emergence of Scaling in Random Networks, Science, Vol. 286, Issue 5439, pp. 509-512 DOI: 10.1126/science.286.5439.509.

Barabasi AL and Oltvai ZN., (2004) Network biology: understanding the cell's functional organization, *Nature Reviews Genetics*, volume 5, pages 101–113.

Barrat A., Barthelemy M., Pastor-Satorras R., Vespignani A., (2004) The architecture of complex weighted networks. *PNAS*, 101 (11) 3747-3752; <https://doi.org/10.1073/pnas.0400087101>.

Barthelemy M., Barrat A., Satorras RP., Vespignani A. (2005) Characterization and modeling of weighted networks. *Physica A: Statistical Mechanics and its Applications*. Volume 346, Issues 1–2, Pages 34-43. <https://doi.org/10.1016/j.physa.2004.08.047>.

Batada NN., Hurst LD and Tyers M. (2006) Evolutionary and Physiological Importance of Hub Proteins. PLoS Comput Biol. Jul; 2(7): e88. doi: 10.1371/journal.pcbi.0020088.

Bauer AK., Velmurugan K., Plottner S., Siegrist KJ., Romo D., Welge P., Bruning T., Xiong KN., Kafferlein HU. (2018) Environmentally prevalent polycyclic aromatic hydrocarbons can elicit co-carcinogenic properties in an in vitro murine lung epithelial cell model. Archives of Toxicology. volume 92, pages 1311–1322.

Belletti B and Baldassarre G. (2015). Roles of CDKN1B in cancer? Aging (Albany NY). 7(8): 529–530. doi: 10.18632/aging.100786. PMID: PMC4586097.

Bergmann FT., Hoops S., Klahn B., Kummer U., Mendes P., Pahle J., Sahle S., (2017) COPASI and its Applications in Biotechnology, J Biotechnol.; 261: 215–220. doi: 10.1016/j.jbiotec.2017.06.1200, PMID: PMC5623632.

Berman H.M., Westbrook J., Feng Z., Gilliland G., Bhat T.N., Weissig H., Shindyalov IN., Bourne PE. (2000) The Protein Data Bank Nucleic Acids Research, **28**: 235-242. doi:10.1093/nar/28.1.235.

Bianco A., Kostarelos K., Prato M., (2011) Making carbon nanotubes biocompatible and biodegradable. Chem. Commun. 47, 10182-10188. <https://doi.org/10.1039/C1CC13011K>.

Bianco, A., Kostarelos, K., & Prato, M. (2005). Applications of carbon nanotubes in drug delivery. *Current Opinion in Chemical Biology*, 9(6), 674–679. doi:10.1016/j.cbpa.2005.10.005.

Bindela G., Mlecnik B., Hackl H., Charoentong P. Tosolini M., Kirilovsky A., Fridman WH., Pages F., Trajanoski Z., Galon J. (2009) ClueGO: a Cytoscape plug-in to decipher functionally grouped gene ontology and pathway annotation networks. *Bioinformatics*. 25(8): 1091–1093. doi: 10.1093/bioinformatics/btp101. PMCID: PMC2666812.

Boccaletti, S., Latora, V., Moreno, Y., Chavez, M. & Hwang, D. U. (2006). Complex networks: Structure and dynamics. *Physics Reports* doi:10.1016/j.physrep.2005.10.009.

Boer LD., Oakes V., Beamish H., Giles N., Stevens F., Somodevilla-Torres M., DeSouza C., Gabrielli B. (2008). Cyclin A/cdk2 coordinates centrosomal and nuclear mitotic events. *Oncogene* volume 27, pages4261–4268. doi:10.1038/onc.2008.74.

Boffette P., Hecht S., Gray N., Gupta P., Straif K., (2008) Smokeless tobacco and cancer; *Lancet Oncol*; 9: 667–75.

Borges BE., Appel MH., Cofre AR., Prado ML., Steclan CA., Esnard F., Zanata SM., Laurindo FRM., Nakao LS. (2015). The flavo-oxidase QSOX1 supports vascular smooth muscle cell migration and proliferation: Evidence for a role in neointima growth. (BBA) *Molecular Basis of Disease* Volume 1852, Issue 7, Pages 1334-1346. <https://doi.org/10.1016/j.bbadi.2015.03.002>.

Brady-Estévez, A. S., Kang, S. and Elimelech, M., (2008) A single-walled-carbon-nanotube filter for removal of viral and bacterial pathogens. *Small*, 4, No. 4, 481.doi: 10.1002/smll.200700863. PMID: 18383192.

Brandes U (2008) Onvariants of shortest-path betweenness centrality and their generic computation. *Soc Netw* 2:136–145.

Broido AD and Clauset A., (2019) Scale-free networks are rare. *Nature Communications* volume 10, Article number: 1017.

Broido AD. and Clauset A., (2019) Scale-free networks are rare. *NATURE COMMUNICATIONS*,10:1017, <https://doi.org/10.1038/s41467-019-08746-5>.

Chakravarthi S., Jessop C.E., Willer M., Stirling C.J., Bulleid N.J. (2007).Intracellular catalysis of disulfide bond formation by the human sulfhydryl oxidase, QSOX1.*Biochem. J.* 404:403-411. PubMed:17331072.

Chang BL., Zheng SL., Isaacs SD., Wiley KE., Turner A., Li G., Walsh PC., Meyers DA., Isaac WB., Xu J. (2004). A Polymorphism in the CDKN1B Gene Is Associated with Increased Risk of Hereditary Prostate Cancer. *CANCER RESEARCH* 64, 1997–1999, DOI: 10.1158/0008-5472.CAN-03-2340.

Chang X., Xu T., Li Y., Wang K., (2013). Dynamic modular architecture of protein-protein interaction networks beyond the dichotomy of ‘date’ and ‘party’ hubs. *Scientific Reports* volume 3, Article number: 1691.

Chen C., Shen H., Zhang LG., Liu J., Cao XG., Yao AL., Kang SS., Gao WX., Han H., Cao FH., Li ZG. (2016) Construction and Analysis of Protein-Protein Interaction Networks Based on Proteomics Data of Prostate Cancer. *Int J Mol Med.*;37(6):1576-86. doi: 10.3892/ijmm.2016.2577. PMID: 27121963.

Chibazakura T., Kamachi K., Ohara M., Tane S., Yoshikawa H., Roberts JM. (2011). Cyclin A Promotes S-Phase Entry via Interaction with the Replication Licensing Factor Mcm7. *MOLECULAR AND CELLULAR BIOLOGY*, p. 248–255. Vol. 31, No. 2. doi:10.1128/MCB.00630-10.

Chin CH., Chen SH., Wu HH., Ho CW., Ko MT., Lin CY. (2014) cytoHubba: identifying hub objects and sub-networks from complex interactome. *BMC Syst Biol*; 8(Suppl 4): S11.doi: 10.1186/1752-0509-8-S4-S11. PMCID: PMC4290687.

Claussen, J. C., Shi, J., Rout, C. S., Artiles, M. S., Roushar, M. M., Stensberg, M. C., ... Fisher, T. S. (2012). Nano-sized biosensors for medical applications. *Biosensors for Medical Applications*, 65–102. doi:10.1533/9780857097187.1.65.

Colijn C., Jones N., Johnston IG., Yaliraki S., Barahona M., (2017) Toward Precision Healthcare: Context and Mathematical Challenges. *Front Physiol.*; 8: 136. doi: 10.3389/fphys.2017.00136.

Crescenzi P., Grossi R., Habib M., Lanzi L., Marino A. (2013). On computing the diameter of real-world undirected graphs. *Theoretical Computer Science* 514; 84–95. doi:10.1016/j.tcs.2012.09.018.

Currier AW., Kolb EA., Gorlick RG., Roth ME., Gopalakrishnan V., Sampson VB. (2019). p27/Kip1 functions as a tumor suppressor and oncoprotein in osteosarcoma. Scientific Reports volume 9, Article number: 6161. <https://doi.org/10.1038/s41598-019-42450-0>.

Degner SC, Kemp MQ, Hockings JK, Romagnolo DF: (2007) Cyclooxygenase-2 promoter activation by the aromatic hydrocarbon receptor in breast cancer mcf-7 cells: repressive effects of conjugated linoleic acid. Nutr Cancer.;59(2):248-57. [18001219].

Dhasmana A, Sajid Jamal QM, Mir SS, Bhatt MLB, Rahman Q, et al. (2014) Titanium Dioxide Nanoparticles As Guardian against Environmental Carcinogen Benzo[alpha]Pyrene. PLoS ONE 9(9): e107068. doi:10.1371/journal.pone.0107068.

Dhasmana A, Sajid Jamal QM, Mir SS, Bhatt MLB, Rahman Q, Gupta R, Siddiqui MH., Lohani M. (2014) Titanium Dioxide Nanoparticles As Guardian against Environmental Carcinogen Benzo[alpha]Pyrene. PLoS ONE 9(9): e107068. <https://doi.org/10.1371/journal.pone.0107068>.

Dhasmana A., Uniyal S., Anukriti., Kashyap VK., Somvanshi P., Gupta M., Bhardwaj U., Jaggi M., Yallapu MM., Haque S., Chauhan SC., (2020) Topological and system-level protein interaction network (PIN) analyses to deduce molecular mechanism of curcumin. Scientific Reports 10(1):12045; DOI: 10.1038/s41598-020-69011-0.

Dhasmana, A.; Jamal, Q.M.; Gupta, R.; Siddiqui, M.H.; Kesari, K.K.; Wadhwa, G.; Khan, S.; Haque, S.; Lohani, M. (2016) Titanium dioxide nanoparticles provide

protection against polycyclic aromatic hydrocarbon BaP and chrysene-induced perturbation of DNA repair machinery: A computational biology approach. Biotechnol. Appl. Biochem. 63, 497–513.

Dietz KJ, Jacquot JP, Harris G (2010) Hubs and bottlenecks in plant molecular signalling networks. New Phytol 188(4):919–936. doi: 10.1111/j.1469-8137.2010.03502.x. PMID: 20958306.

Drager A., Hassis N., Supper J., Schroder A., Zell A., (2008). SBMLsqueezer: A CellDesigner plug-in to generate kinetic rate equations for biochemical networks. BMC Systems Biology volume 2, Article number: 39 .

Edelstein SJ, Schaad O, Henry E, Bertrand D, Changeux JP. (1996) A kinetic mechanism for nicotinic acetylcholine receptors based on multiple allosteric transitions. Biol Cybern; 75(5): 361-379.

Ekdam D., Light S., Bjorklund AK., Elofsson A., (2006) What properties characterize the hub proteins of the protein-protein interaction network of *Saccharomyces cerevisiae*? Genome Biol.; 7(6): R45. doi: 10.1186/gb-2006-7-6-r45. PMCID: PMC1779539.

Elhissi AMA., Ahmed W., Hassan IU., Dhanak VR., D'Emaneule A. (2012) Carbon Nanotubes in Cancer Therapy and Drug Delivery, J Drug Deliv, Volume 2012, Article ID 837327, <https://doi.org/10.1155/2012/837327>.

Embar V., Handen A., Ganapathiraju MK. (2016) Is the Average Shortest Path Length of Gene Set a Reflection of their Biological Relatedness? *J BioinformComput Biol.*; 14(6): 1660002. doi:10.1142/S0219720016600027.

Eyler CE., Wu Q., Yan K., MacSwords JM., Militello DC., Misuraca KL., Lathia JD., Forrester MT., Lee J., Stamler JS., Goldman SA., Bredel M., McLendon RE., Sloan AE., Hjelmeland AE., Rich JN. (2011) Glioma Stem Cell Proliferation and Tumor Growth are Promoted by Nitric Oxide Synthase-2. *Cell.* 146(1): 53–66. doi: 10.1016/j.cell.2011.06.006. PMCID: PMC3144745.

Fischer HP. (2008). Mathematical Modeling of Complex Biological Systems

Fischer HP., (2008) Mathematical Modeling of Complex Biological Systems- From Parts Lists to Understanding Systems Behavior. *Alcohol Res Health.*; 31(1): 49–59.

Fisher RP. (2005). Secrets of a double agent: CDK7 in cell-cycle control and transcription. *Journal of Cell Science.* 118: 5171–5180; doi: 10.1242/jcs.02718.

Francisco-Marquez, M., Galano, A., & Martínez, A. (2010). On the Free Radical Scavenging Capability of Carboxylated Single-Walled Carbon Nanotubes. *The Journal of Physical Chemistry C*, 114(14), 6363–6370. doi:10.1021/jp100065t.

From Parts Lists to Understanding Systems Behavior. *Alcohol Res Health.* 31(1): 49–59. PMCID: PMC3860444.

Funahashi, A., Tanimura, N., Morohashi, M., and Kitano, H., (2003) CellDesigner: a process diagram editor for gene-regulatory and biochemical networks, BIOSILICO, 1:159-162.doi:10.1016/S1478-5382(03)02370-9.

Galano A., (2008) Carbon Nanotubes as Free-Radical Scavengers. J. Phys. Chem. C, 112, 24, 8922–8927. <https://doi.org/10.1021/jp801379g>.

Gao X., Cai Y., Wang Z., He W., Cao S., Xu R., Chen H. (2019) Estrogen receptors promote NSCLC progression by modulating the membrane receptor signaling network: a systems biology perspective. Journal of Translational Medicine. volume 17, Article number: 308. <https://doi.org/10.1186/s12967-019-2056-3>.

Ge GZ., Xu TR. and Chen C. (2015) Tobacco carcinogen NNK-induced lung cancer animal models and associated carcinogenic mechanisms. Acta BiochimBiophys Sin, 47(7), 477–487. doi: 10.1093/abbs/gmv041.

Golbeck, J. (2013) Network Structure and Measures.Analyzing the Social Web, 25–44. doi:10.1016/b978-0-12-405531-5.00003-1.

Goldbeter A. (1991) A minimal cascade model for the mitotic oscillator involving cyclin and cdc2 kinase. Proc. Natl. Acad. Sci. U.S.A.; 88(20): 9107-9111.

Guerra FD., Attia MF., Whitehead DC., Alexis F., (2018) Nanotechnology for Environmental Remediation: Materials and Applications, Molecules. 23(7): 1760. doi: 10.3390/molecules23071760, PMCID: PMC6100491.

Hamilton DH., Griner LM., Keller JM., Hu X., Southall N., Marugan J., David JM., Ferrer M., Palena C. (2016) Targeting Estrogen Receptor Signaling with Fulvestrant Enhances Immune and Chemotherapy-Mediated Cytotoxicity of Human Lung Cancer. Clin Cancer Res; 22(24).doi: 10.1158/1078-0432.CCR-15-3059.

Haneef, M.; Lohani, M.; Dhasmana, A.; Jamal, Q.M.; Shahid, S.M.; Firdaus, S. (2014) Molecular Docking of Known Carcinogen 4-(Methyl-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK) with Cyclin Dependent Kinases towards Its Potential Role in Cell Cycle Perturbation. Bioinformation, 10, 526–532.

Hecht, S.S. (2002) Tobacco smoke carcinogens and breast cancer. Environ. Mol. Mutagen. 39, 119–126.

Hoops S., Sahle S., Gauges R., Lee C., Pahle J., Simus N., Singhal M., Xu L., Mendes P., Kummer U., (2006) COPASI—a COmplexPAthway Simulator, *Bioinformatics*, Volume 22, Issue 24, Pages 3067–3074, <https://doi.org/10.1093/bioinformatics/btl485>.

Huang DW., Sherman BT., Lempicki RA. (2009). Bioinformatics enrichment tools: paths toward the comprehensive functional analysis of large gene lists. Nucleic Acids Res; 37(1): 1–13. doi: 10.1093/nar/gkn923. PMCID: PMC2615629.

Huang RY. and Chen GG.(2011) Cigarette smoking, cyclooxygenase-2 pathway and cancer. *Biochimica et Biophysica Acta* 1815. 158–169. doi:10.1016/j.bbcan.2010.11.005.

I. Rašović. (2017) Water-soluble fullerenes for medical applications, Materials Science and Technology, , 33:7, 777-794, DOI: 10.1080/02670836.2016.1198114.

IARC – iarc.fr

Ilani T., Alon A., Grossman I., Horowitz B., Kartvelishvily E., Cohen S.R., Fass D. (2013). A secreted disulfide catalyst controls extracellular matrix composition and function. *Science* 341:74-76.

J.O. Rosado, J.A.P. Henriques and D. Bonatto, (2011) A Systems Pharmacology Analysis of Major Chemotherapy Combination Regimens Used in Gastric Cancer Treatment: Predicting Potential New Protein Targets and Drugs, *Current Cancer Drug Targets*, 11, 849-869.

Javitt G., Grossman-Haham I., Alon A., Resnick E., Mutsafi Y., Ilani T., Fass D. (2019). cis-Proline mutants of quiescin sulfhydryl oxidase 1 with altered redox properties undermine extracellular matrix integrity and cell adhesion in fibroblast cultures. *Protein Sci.* 28:228-238.

Ji Z., Yan K., Li W., Hu H., Zhu X., (2017) Mathematical and Computational Modeling in Complex Biological Systems. Hindawi BioMed Research International Volume 2017, Article ID 5958321, 16 pages <https://doi.org/10.1155/2017/5958321>.

Ji Z., Yan K., Li W., Hu H., Zhu X., (2017) Mathematical and Computational Modeling in Complex Biological Systems. BioMed Research International. Volume 2017, Article ID 5958321, <https://doi.org/10.1155/2017/5958321>.

Kagan VE., Konduru NV., Feng W., Allen BL., Conroy J., Volkov Y., Vlasova II., Belikova NA., Yanamala N., Kapralov A., Tyurina YY., Shi J., Kisin ER., Murray AR., Franks J., Stoltz D., Gou P., Seetharaman JK., Fadeel B., Star A., Shvedova AA., (2010) Carbon nanotubes degraded by neutrophil myeloperoxidase induce less pulmonary inflammation. Nature Nanotechnology volume 5, pages 354–359.

Kanehisa, M. and Goto, S.; (2000) KEGG: Kyoto Encyclopedia of Genes and Genomes. Nucleic Acids Res. 28, 27-30.

Kang TH., Yeo MH and Yoo JS. (2010) Essentiality of Hub Proteins in Protein-protein Interaction Networks of Yeast. Journal of the Korean Physical Society, Vol. 56, No. 5. DOI: 10.3938/jkps.56.1527.

Khin MM., Nair AS., Babu VJ., Murugan R., Ramakrishna S. (2012). A review on nanomaterials for environmental remediation. Science, 5(8), 8075. doi:10.1039/c2ee21818f.

Kim, P. M., Lu, L. J., Xia, Y. & Gerstein, M. B. (2006) Relating three-dimensional structures to protein networks provides evolutionary insights. Science 314, 1938–1941.

Kitano, H., Funahashi A., Matsuoka Y., Oda K., (2005) "Using process diagram for the graphical representation of biological networks", Nature Biotechnology. 23(8), 961-966.

Knutsvik G., Collett K., Arnes J., Akslen LA., Stefansson IM., (2016) QSOX1 expression is associated with aggressive tumor features and reduced survival in breast carcinomas. Modern Pathology. Volume 29, pages1485–1491.

Knutsvik G., Collett K., Arnes J., Akslen LA., Stefansson IN. (2016). QSOX1 expression is associated with aggressive tumor features and reduced survival in breast carcinomas. Modern Pathology volume 29, pages1485–1491.

Koutrouli M., Karatzas E., Espino DP., Pavlopoulos GA., (2020) A Guide to Conquer the Biological Network Era Using Graph Theory. Front. Bioeng. Biotechnol., <https://doi.org/10.3389/fbioe.2020.00034>.

Koutsogiannouli E, Papavassiliou AG, Papanikolaou NA (2013) Complexity in cancer biology: is systems biology the answer? Cancer Med 2(2):164–177.

Koutsogiannouli, E., Papavassiliou, A. G. & Papanikolaou, N. A. (2013). Complexity in cancer biology: is systems biology the answer? Cancer Med. doi:10.1002/cam4.62.

Lake DF and Faigel DO., (2014) The Emerging Role of QSOX1 in Cancer. Antioxid Redox Signal. 21(3): 485–496. doi: 10.1089/ars.2013.5572. PMCID: PMC4076994.

Larochelle S., Merrick KA., Terret ME., Wohlbold L., Barboza NM., Zhang C., Shokat KM., Jallepalli PV., Fisher RP. (2007). Requirements for Cdk7 in the Assembly of

Cdk1/Cyclin B and Activation of Cdk2 Revealed by Chemical Genetics in Human Cells. *Molecular Cell* 25, 839–850, DOI 10.1016/j.molcel.2007.02.003.

Li C., Donizelli M., Rodriguez N., Dharuri H., Endler L., Chelliah V., Li L., He E., Henry A., Stefan MI., Snoep JL., Hucka M., Novère NL., Laibe C., (2010) BioModels Database: An enhanced, curated and annotated resource for published quantitative kinetic models. *BMC Systems Biology* , 4:92.

Li, Z., de Barros, A. L. B., Soares, D. C. F., Moss, S. N., & Alisaraie, L. (2017). Functionalized single-walled carbon nanotubes: cellular uptake, biodistribution and applications in drug delivery. *International Journal of Pharmaceutics*, 524(1-2), 41–54. doi:10.1016/j.ijpharm.2017.03.017.

Lim E, Pon A, Djoumbou Y, Knox C, Srivastava S, Guo AC, Neveu V, Wishart DS. (2010) *T3DB: a comprehensively annotated database of common toxins and their targets*. *Nucleic Acids Res.* 38(Database issue):D781-6.

Lizarraga D, Gaj S, Brauers KJ, Timmermans L, Kleinjans JC, van Delft JH: (2012) Benzo[a]pyrene-induced changes in microRNA-mRNA networks. *Chem Res Toxicol.*;25(4):838-49. doi: 10.1021/tx2003799. [22316170].

Lizarraga D, Gaj S, Brauers KJ, Timmermans L, Kleinjans JC, van Delft JH: (2012) Benzo[a]pyrene-induced changes in microRNA-mRNA networks. *Chem Res Toxicol.*; 25(4):838-49. doi: 10.1021/tx2003799. Epub 2012 Feb 22. [22316170].

Lolli G and Johnson LN. (2007). Recognition of Cdk2 by Cdk7. PROTEINS: Structure, Function, and Bioinformatics 67:1048-1059. DOI: 10.1002/prot.21370.

Lovell SC, Davis IW., Arendall WB.III, Bakker PIW., Word JM., Prisant MG., Richardson JS., Richardson DC. (2002) Structure validation by Calpha geometry: phi,psi and Cbeta deviation. Proteins: Structure, Function & Genetics. 50: 437-450.

Ma X., Zhou G., Shang J., Wang J., Peng J., Han J., (2017) Detection of Complexes in Biological Networks Through Diversified Dense Subgraph Mining, Journal of Computational Biology, Volume 24, Number 9.

Mali, N., Jadhav, S., Karpe, M. & Kadam, V. (2011). Carbon nanotubes as carriers for delivery of bioactive and therapeutic agents: An overview. International Journal of Pharmacy and Pharmaceutical Sciences, 3, 45-52.

Maslov, S., & Sneppen, K. (2002). Specificity and stability in topology of protein networks. Science Signaling, 296, 910.

Mason O. and Verwoerd M., (2007) Graph Theory and Networks in Biology. IET Syst Biol;1(2):89-119. doi: 10.1049/iet-syb:20060038.

Masuda N, Sakaki M, Ezaki T and Watanabe T (2018) Clustering Coefficients for Correlation Networks. Front. Neuroinform. 12:7. doi: 10.3389/fninf.2018.00007.

Mauter MS and Elimelech M. (2008). Environmental Applications of Carbon-Based Nanomaterials. *Environ. Sci. Technol.* 2008, 42, 16, 5843–5859.
<https://doi.org/10.1021/es8006904>.

McDermott JE., Taylor RC., Yoon H., Heffron F., (2009) Bottlenecks and Hubs in Inferred Networks Are Important for Virulence in *Salmonella typhimurium*. JOURNAL OF COMPUTATIONAL BIOLOGY. Volume 16. DOI: 10.1089/cmb.2008.04TT.

Melchor S. and Dobado JA., (2004) CoNTub: An Algorithm for Connecting Two Arbitrary Carbon Nanotubes, *J Chem Inf Comput Sci.*;44(5):1639-46. doi: 10.1021/ci049857w. PMID: 15446821.

Meng XY., Zhang HX., Mezei M., Cui M. (2011). Molecular Docking: A powerful approach for structure-based drug discovery. *Curr Comput Aided Drug Des.* 7(2): 146–157. PMCID: PMC3151162.

Mineo TC., Ambrogi V., Cufari ME., Pompeo E. (2010) May cyclooxygenase-2 (COX-2), p21 and p27 expression affect prognosis and therapeutic strategy of patients with malignant pleural mesothelioma? *Eur J Cardiothorac Surg.* 38(3):245-52.
doi: 10.1016/j.ejcts.2010.02.012.

Mitra J and Enders GH. (2004). Cyclin A/Cdk2 complexes regulate activation of Cdk1 and Cdc25 phosphatases in human cells. *Oncogene*; 23(19): 3361–3367.
doi: 10.1038/sj.onc.1207446. PMCID: PMC1924680.

Mohajeri, M., Behnam, B., & Sahebkar, A. (2018). Biomedical applications of carbon nanomaterials: Drug and gene delivery potentials. *Journal of Cellular Physiology*. doi:10.1002/jcp.26899.

Mohyedinbonab, E., Jamshidi, M., & Jin, Y.-F. (2014). A Review on Applications of Graph Theory in Network Analysis of Biological Processes. *International Journal of Intelligent Computing in Medical Sciences & Image Processing*, 6(1), 27–43. doi:10.1080/1931308x.2014.938492.

Moorthy B., Chu C., Carlin DJ., (2015) Polycyclic Aromatic Hydrocarbons: From Metabolism to Lung Cancer. *TOXICOLOGICAL SCIENCES*, 145(1), 5–15, doi: 10.1093/toxsci/kfv040.

Morris, G. M., Goodsell, D. S., Halliday, R.S., Huey, R., Hart, W. E., Belew, R. K. and Olson, A. J., (1998) Automated Docking Using a Lamarckian Genetic Algorithm and Empirical Binding Free Energy Function *J. Computational Chemistry*. **19**: 1639-1662.

Mulder NJ., Akinola RO., Mazandu GK., Rapanoil H. (2014) Using biological networks to improve our understanding of infectious diseases. *Computational and Structural Biotechnology Journal* 11 1–10. <http://dx.doi.org/10.1016/j.csbj.2014.08.006>.

Mura M, Feillet C, Bertolusso R, Delaunay F, Kimmel M (2019) Mathematical modeling reveals unexpected inheritance and variability patterns of cell cycle

parameters in mammalian cells. PLoS Comput Biol 15(6): e1007054.
<https://doi.org/10.1371/journal.pcbi.1007054>.

Novère NL., Bornstein B, Broicher A, Courtot M, Donizelli M, Dharuri H, Lu Li, Sauro H., Schilstra M., Shapiro B., Snoep JL., Hucka M., (2006) BioModels Database: A Free, Centralized Database of Curated, Published, Quantitative Kinetic Models of Biochemical and Cellular Systems. Nucleic Acids Research , 34(Database issue):D689-91

Nunez, K.; Kay, J.; Krotow, A.; Tong, M.; Agarwal, A.R. (2016) Cigarette Smoke-Induced Alterations in Frontal White Matter Lipid Profiles Demonstrated by MALDI-Imaging Mass Spectrometry: Relevance to Alzheimer's Disease. J. Alzheimers Dis., 51, 151–163.

Ong YT., Ahmad AL., Zein SHS, Tan SH., (2010) A review on carbon nanotubes in an environmental protection and green engineering perspective.Brazilian Journal of Chemical Engineering. Vol. 27, No. 02, pp. 227 – 242. ISSN 0104-6632.

Pai, M.; Mohan, A.; Dheda, K.; Leung, C.C.; Yew,W.W.; Christopher, D.J.; Sharma, S.K. (2007) Lethal Interaction: The colliding epidemics of tobacco and tuberculosis. Expert Rev. Anti Infect. Ther., 5, 385–391.

Parsa N., (2012) Environmental Factors Inducing Human Cancers. Iran J Public Health.; 41(11): 1–9. PMCID: PMC3521879.

Patra JK., Das G., Fracto LF., Campos EVR., Rodriguez- Torres MDP., Acosta- Torres LS., Diaz- Torres LA., Grillo R., Swamy MK., Sharma S., Habtemariam S., Shin HS., (2018). Nano based drug delivery systems: recent developments and future prospects. Journal of Nanobiotechnology volume 16, Article number: 71.

Pavlopoulos GA. Secrier M., Moschopoulos CN., Soldatos TG., Kossida S., Aerts J., Schneider R., Bagos PG., (2011) Using graph theory to analyze biological networks. BioData Min.;4:10. DOI: 10.1186/1756-0381-4-10. PMID: 21527005.

Poli A., Mongiorgi S., Cocco L., Follo MY., (2014) Protein Kinase C Involvement in Cell Cycle Modulation. Biochem Soc Trans. ; 42(5):1471-6. doi: 10.1042/BST20140128. PMID: 25233434.

Raval, J. P., Joshi, P., &Chejara, D. R. (2018) Carbon nanotube for targeted drug delivery. Applications of Nanocomposite Materials in Drug Delivery, 203–216. doi:10.1016/b978-0-12-813741-3.00009-1.

Ren Y., Ay A., Kahveci T. (2018) Shortest path counting in probabilistic biological networks. BMC Bioinformatics 19:465. <https://doi.org/10.1186/s12859-018-2480-z>.

RS Wang and J Lascalzo.(2018) Network-Based Disease Module Discovery by a Novel Seed Connector Algorithm with Pathobiological Implications. J Mol Biol.;430. doi: 10.1016/j.jmb.2018.05.016.

Sabestian S and Shamsir MS., (2019) Computer aided analysis of disease linked protein networks. Bioinformation 15(7): 513-522. DOI: 10.6026/97320630015513.

Schachter MM., Merrick KA., Larochelle S., Hirschi A., Zhang C., Shokat KM., Rubin SM., Fisher RP. (2013). A Cdk7-Cdk4 T-Loop Phosphorylation Cascade Promotes G1 Progression. Molecular Cell 50, 250–260, <http://dx.doi.org/10.1016/j.molcel.2013.04.003>.

Schick SF and Glantz S (2007). Concentrations of the Carcinogen 4-(Methylnitrosamino)-1-(3-Pyridyl)-1-Butanone in Sidestream Cigarette Smoke Increase after Release into Indoor Air: Results from Unpublished Tobacco Industry Research. Cancer Epidemiol Biomarkers Prev. 16(8). doi:10.1158/1055-9965.EPI-07-0210.

Schmidt T., Samaras P., Frejno M., Gessulat S., Barnert M., Kienegger H., Krcmar H., Schlegl J., Ehrlich HC., Aiche S., Kuster B., Wilhelm M. (2018) ProteomicsDB. Nucleic Acids Res.; 46(Database issue): D1271–D1281. doi: 10.1093/nar/gkx1029. PMID: PMC5753189. PMCID: PMC5753189.

Seyed-allaei H., Bianconi G., Marsili M., (2006) Scale-free networks with an exponent less than two, PHYSICAL REVIEW E 73, 046113.

Shannon P., Markiel A., Ozier O., Baliga NS., Wang JT., Ramage D., Amin N., Schwikowski B, Ideker T. (2003) Cytoscape: A Software Environment for Integrated

Models of Biomolecular Interaction Networks. *Genome Res.*;13(11):2498-504. doi: 10.1101/gr.1239303.

Sobolewski C., Cerella C., Dicato M., Ghibelli L., Diederich M. (2010). The Role of Cyclooxygenase-2 in Cell Proliferation and Cell Death in Human Malignancies. *International Journal of Cell Biology* Volume 2010, Article ID 215158, 21 pages doi:10.1155/2010/215158.

Sobolewski C., Cerella C., Dicato M., Ghibelli L., Diederich M., (2009) The Role of Cyclooxygenase-2 in Cell Proliferation and Cell Death in Human Malignancies. *International Journal of Cell Biology*.Volume 2010, Article ID 215158, 21 pages. doi:10.1155/2010/215158.

Sohn SH, Kim KN, Kim IK, Lee EI, Ryu JJ, Kim MK: (2008) Effects of tobacco compounds on gene expression in fetal lung fibroblasts. *Environ Toxicol.*; 23(4):423-34. doi: 10.1002/tox.20335. [18247414].

Souza T., Jennen D., Delft J., Herwijnen M., Kryptopoulos S., Kleinjans J., (2016) New insights into BaP-induced toxicity: role of major metabolites in transcriptomics and contribution to hepatocarcinogenesis. *Arch Toxicol.*; 90: 1449–1458. doi: 10.1007/s00204-015-1572-z. PMCID: PMC4873527.

Sparfel L, Pinel-Marie ML, Boize M, Koscielny S, Desmots S, Pery A, Fardel O: (2010) Transcriptional signature of human macrophages exposed to the environmental

contaminant benzo(a)pyrene. *Toxicol Sci.*; 114(2):247-59. doi: 10.1093/toxsci/kfq007. Epub 2010 Jan 11. [20064835].

Stephen S. Hecht (2003) tobacco carcinogens, their biomarkers and tobacco-induced cancer; *nature reviews, cancer*, volume 3.

Stephen S. Hecht; (2002) Cigarette smoking and lung cancer: chemical mechanisms and approaches to prevention; *Lancet Oncol*; 3: 461–69.

Stokman, F. N. (2001). Networks: Social. *International Encyclopedia of the Social & Behavioral Sciences*, 10509–10514. doi:10.1016/b0-08-043076-7/01934-3.

Streib FE and Dehmer M. (2011) Networks for systems biology: conceptual connection of data and function. *IET Syst. Biol.*, Vol. 5, Iss. 3, pp. 185–207 185.doi: 10.1049/iet-syb.2010.0025.

Sun C., Wang G., Wrighton KH., Lin H., Songyang Z., Feng XH., Lin X. (2016). Regulation of p27Kip1 phosphorylation and G1 cell cycle progression by protein phosphatase PPM1G. *Am J Cancer Res.* 2016; 6(10): 2207–2220. PMCID: PMC5088286.

Szklarczyk D., Franceschini A., Wyder S., Forslund K., Heller D., Cepas JH., Simonovic M., Roth A., Santos A., Tsafou KP., Kuhn M., Bork P., Jensen LJ., Mering C. (2015) STRING v10: Protein-Protein Interaction Networks, Integrated Over the Tree of Life, *Nucleic Acids Res.*;43(Database issue):D447-52. doi: 10.1093/nar/gku1003.

Szklarczyk D., Gable AL. Lyon D., Junge A., Wyder S., Cepas JH., Simonovic M., Doncheva NT., Morris JH., Bork P., Jensen LJ., Mering C., (2019) STRING v11: protein–protein association networks with increased coverage, supporting functional discovery in genome-wide experimental datasets. *Nucleic Acids Research*, Volume 47, Issue D1, Pages D607–D613, <https://doi.org/10.1093/nar/gky1131>.

Tang J., Li Z., Lu L., Cho CH., (2013) Adrenergic system, a backstage manipulator regulating tumour progression and drug target in cancer therapy; *Seminars in Cancer Biology* 23P 533– 542.

The UniProt Consortium, UniProt: a worldwide hub of protein knowledge, *Nucleic Acids Research*, Volume 47, Issue D1, 08 January 2019, Pages D506–D515, <https://doi.org/10.1093/nar/gky1049>.

Thomas C. and Gustafsson JA., (2011) The Different Roles of ER Subtypes in Cancer Biology and Therapy. *Nat Rev Cancer.* 11(8):597-608. doi: 10.1038/nrc3093. PMID: 21779010.

Toyoshima T., Kamijo R., Takizawa K., Sumitani K., Ito D., Nagumo M., (2002) Inhibitor of cyclooxygenase-2 induces cell-cycle arrest in the epithelial cancer cell line via up-regulation of cyclin dependent kinase inhibitor p21. *British Journal of Cancer.* Volume 86, pages1150–1156.

Toyoshima T., Kamijo R., Takizawa K., Sumitani K., Ito D., Nagumo M. (2002). Inhibitor of cyclooxygenase-2 induces cell-cycle arrest in the epithelial cancer cell line

via up-regulation of cyclin dependent kinase inhibitor p21. British Journal of Cancer volume 86, pages1150–1156.

Tyson JJ., (1991) Modeling the cell division cycle: cdc2 and cyclin interactions. Proc. Natl. Acad. Sci. U.S.A.; 88(16): 7328-7332.

Vannini F., Kashfi K., Nath N. (2015). The dual role of iNOS in cancer. Redox Biol. 6: 334–343. doi: 10.1016/j.redox.2015.08.009. PMCID: PMC4565017.

Vashist, S. K., Zheng, D., Pastorin, G., Al-Rubeaan, K., Luong, J. H. T. & Sheu, F. S. (2011). Delivery of drugs and biomolecules using carbon nanotubes. Carbon, 49, 4077-4097.

Wallenfang MR and Seydoux G. (2002). cdk-7 is required for mRNA transcription and cell cycle progression in *Caenorhabditis elegans* embryos. PNAS April 16, 2002 99 (8) 5527-5532; <https://doi.org/10.1073/pnas.082618399>.

Wang M., Herrmann CJ., Simonovic M., Szklarczyk D., Mering C. (2015). Version 4.0 of PaxDb: Protein abundance data, integrated across model organisms, tissues, and cell-lines. Proteomics. 15(18):3163-8. doi: 10.1002/pmic.201400441.

Wang ZH , Liang QL , Wang YM and Luo GA., Carbon nanotube-intercalated graphite electrodes for simultaneous determination of dopamine and serotonin in the presence of ascorbic acid . J ElectroanalChem , 2003. 540 , 129 – 134 . DOI: 10.1016/S0022-0728(02)01300-1.

Watts, D. J., & Strogatz, S. H. (2011). Collective dynamics of “small-world” networks. *The Structure and Dynamics of Networks*. doi:10.1515/9781400841356.301.

Weinstein BI and Joe AK., (2008) Oncogene Addiction. *Cancer Res.*; 68(9):3077-80; doi: 10.1158/0008-5472.CAN-07-3293. PMID: 18451130.

Weinstein BI and Joe AK., (2006) Mechanisms of Disease: Oncogene Addiction--A Rationale for Molecular Targeting in Cancer Therapy. *Nat Clin Pract Oncol.*; 3(8):448-57.doi: 10.1038/ncponc0558. PMID: 16894390.

Wishart D, Arndt D, Pon A, Sajed T, Guo AC, Djoumbou Y, Knox C, Wilson M, Liang Y, Grant J, Liu Y, Goldansaz SA, Rappaport SM. (2015) *T3DB: the toxic exposome database*. *Nucleic Acids Res*; 43(Database issue):D928-34.

Xu B., Lin H., Chen Y., Yang Z., Liu H., (2013) Protein Complex Identification by Integrating Protein-Protein Interaction Evidence from Multiple Sources. *PLoS One*; 8(12): e83841. doi: 10.1371/journal.pone.0083841. PMCID: PMC3873956.

Xu D and Zhang Y. (2011) Improving the Physical Realism and Structural Accuracy of Protein Models by a Two-step Atomic-level Energy Minimization. *Biophysical Journal*, vol 101, 2525-2534.

Xue J., Yang S. and Seng S. (2014) Mechanisms of Cancer Induction by Tobacco-Specific NNK and NNN. *Cancers*, 6, 1138-1156; doi:10.3390/cancers6021138.

Xue J., Yang S., Seng S.,(2014) Mechanisms of Cancer Induction by Tobacco-Specific NNK and NNN. *Cancers (Basel)*. 6(2): 1138–1156. PMCID: PMC4074821.

Yang J and Zhang Y.(2015) Protein Structure and Function Prediction Using I-TASSER. *CurrProtoc Bioinformatics*. 52: 5.8.1–5.815.
doi: 10.1002/0471250953.bi0508s52. PMCID: PMC4871818.

Ye, Q., Wu, B., & Wang, B. (2010). Distance Distribution and Average Shortest Path Length Estimation in Real-World Networks. *Lecture Notes in Computer Science*, 322–333. doi:10.1007/978-3-642-17316-5_32.

Yu H., Kim PM., Sprecher E., Trifonov V and Gerstein M. (2007) The Importance of Bottlenecks in Protein Networks: Correlation with Gene Essentiality and Expression Dynamics. *PLoS Comput Biol* 3(4): e59. <https://doi.org/10.1371/journal.pcbi.0030059>.

Yu H., Kim PM., Sprecher E., Trifonov V., Gerstein M., (2007) The Importance of Bottlenecks in Protein Networks: Correlation with Gene Essentiality and Expression Dynamics,. *PLoS One* (<https://doi.org/10.1371/journal.pcbi.0030059>).

Zabala, V., Tong, M., Yu, R., Ramirez, T., Yalcin, E.B., Balbo, S., Silbermann, E., Deochand, C., Nunez, K., Hecht, S., Monte SM., (2015). Potential Contributions of the Tobacco Nicotine-Derived Nitrosamine Ketone (NNK) in the Pathogenesis of Steatohepatitis in a Chronic Plus Binge Rat Model of Alcoholic Liver Disease. *Alcohol Alcohol*. 50, 118–131.

Zheng H C. and Takano Y., (2011), NNK-Induced Lung Tumors: A Review of Animal Model. *Journal of Oncology*, Volume 2011, doi:10.1155/2011/635379.

Zheng Qi and Wang XJ. (2008). GOEAST: a web-based software toolkit for Gene Ontology enrichment analysis. *Nucleic Acids Research*, Volume 36, Issue suppl_2, 1 July 2008, Pages W358–W363, <https://doi.org/10.1093/nar/gkn276>.

Zhong S., Zhang Y., Yin X., Di W. (2019). CDK7 inhibitor suppresses tumor progression through blocking the cell cycle at the G2/M phase and inhibiting transcriptional activity in cervical cancer. *Onco Targets Ther*.2019; 12: 2137–2147.doi: 10.2147/OTT.S195655. PMCID: PMC6434917.