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Dr. Rohini Gomathinayagam obtained her PhD in Biochemistry from the University of Madras and received post doctoral training in molecular oncology from the University of Louisville, University of Oklahoma in the US. She is deeply interested in understanding cellular mechanisms that are associated with disease pathogenesis. Her research interests pertain to cancer biology, epigenetics and endocrine genetics.

Research projects

Epigenetic regulation of GIPR signaling and MODY3

Prevalence of Single Nucleotide Polymorphisms in the HNF1A gene in the south Indian population and the incidence of MODY3.

THADA polymorphisms in endocrine dysfunctions

Molecular diagnosis of Maturity Onset Diabetes of the Young 3 (MODY3)

Stem cells exosomes and cancer therapy

Publications

- **Rohini Gomathinayagam**, Ji Hee Ha, Muralidharan Jayaraman, Yong Sang Song, Ciro Isidoro, Danny N. Dhanasekaran. Chemopreventive and Anticancer Effects of Thymoquinone: Cellular and Molecular Targets. *J Cancer Prev* 25(3):1-16, September 30, 2020 (ISSN) 2288-3857
- Ji Hee Ha, Muralidharan Jayaraman, Rangasudhagar Radhakrishnan, **Rohini Gomathinayagam**, Mingda Yan, Yong Sang Song, Ciro Isidoro, Danny N. Dhanasekaran. Differential effects of thymoquinone on lysophosphatidic acid induced oncogenic pathways in ovarian cancer cells. *Journal of Traditional and Complementary Medicine*. 2020 Apr 12;10(3):207-216 (ISSN) 2225-4110
- C.C. Gunderson, E.T. Evans, R. Radhakrishnan, **R. Gomathinayagam**, S. Husain, S. Aravindan, K.M. Moore, D.N. Dhanasekaran, M. Jayaraman. Circulating Tumor Cell-Free DNA Genes As Biomarkers For Platinum Resistant Ovarian Cancer Diagnosis. *Gynecological oncology* <https://doi.org/10.1016/j.ygyno.2019.11.043> (ISSN) 0090-8258
- Kumaravel Velayutham, Balaji Ramanathan, Jeyasudha Murugan, Arulvani Murugan, Vishali Thavamani, **Rohini Gomathinayagam***. Carriers of the TCF7L2 rs7903146, rs12255372 risk alleles in the south Tamil Nadu T2DM patients present with early incidence and insulin dependence. *Indian J Endocrinol Metab*. 2019 Sep-Oct;23(5):563-569 doi: 10.4103/ijem.IJEM 540 19 (ISSN) 2230-8210
- Kumaravel Velayutham, Balaji Ramanathan, Sivan Arul Selvan, **Rohini Gomathinayagam*** Incidence and association of TCF7, TCF7L2 single nucleotide polymorphisms in type 1 diabetes mellitus patients of South Tamil Nadu, India. *Int J Community Med Public Health* 2019 Oct;6(10):4588-4595 (ISSN) 2577-2228.

- Kumaravel Velayutham[#], **Rohini Gomathinayagam**, Balaji Ramanathan, Arul Vani Murugesan, Sivan Arul Selvan. Endocrine health in teachers from primary, high and higher secondary schools from South Tamil Nadu, India. *EJBPS*, 2019, 6 (1) 382-392 (ISSN) 2349-8870.
- Sundaram E, Subramanian V, Velayutham K, **Gomathinayagam R**, Vasantha VS. Reply to the Comment on "Michael Addition Based Chemodosimeter for Serum Creatinine Detection Using (E)-3-(Pyren-2-yl)-1-(3,4,5-trimethoxyphenyl)prop-2-en-1-one Chalcone. *ACS Sens.* 2018 Nov 26;3(11):2467-2470. doi: 10.1021/acssensors.8b00818. Epub 2018 Nov 5 (ISSN) 2379-3694.
- Sundaram E, Subramanian V, Velayutham K, **Gomathinayagam R**, Vasantha VS. Michael Addition Based Chemodosimeter for Serum Creatinine Detection Using (E)-3-(Pyren-2-yl)-1-(3,4,5-trimethoxyphenyl)prop-2-en-1-one Chalcone. *ACS Sens.* 2018 Mar 26. doi: 10.1021/acssensors.7b00822 (ISSN) 2379-3694
- **Rohini Gomathinayagam**, Kumaravel Velayutham. Diagnostic and therapeutic efficacy of leptin in type I diabetes therapy. *Curr. Res. Diabetes and Obes. J.* 2017 Nov; 5(4):1-4 (ISSN) 2476-1435.
- Ha JH, Yan M, **Gomathinayagam R**, Jayaraman M, Husain S, Liu J, Mukherjee P, Reddy EP, Song YS, Dhanasekaran DN. Aberrant expression of JNK-associated leucine-zipper protein, JLP, promotes accelerated growth of ovarian cancer. *Oncotarget.* 2016 Sep 16. doi: 10.18632/oncotarget.12069. (ISSN) 1949-2553.
- **Gomathinayagam R.**, Dhanasekaran D.N. (2015) Pancreatic Cancer Desmoplastic Reaction and Metastasis. In: Schwab M. (eds) *Encyclopedia of Cancer.* Springer, Berlin, Heidelberg
- Ha J*, **Gomathinayagam R***, Yan M, Jayaraman M, Ramesh R, Dhanasekaran DN. Determinant Role for the gep oncogenes, Gα12/13, in ovarian cancer cell proliferation and xenograft tumor growth. *Genes & Cancer.* 2015 Jul;6(7-8):356-64 (ISSN) 1947-6019.
- Monaco S, Rusciano MR, Maione AS, Soprano M, **Gomathinayagam R**, Todd LR, Campiglia P, Salzano S, Pastore L, Leggiero E, Wilkerson DC, Rocco M, Selleri C, Iaccarino G, Sankar U, Illario M. A novel cross talk between calcium/calmodulin kinases II and IV regulates cell proliferation in myeloid leukemia cells. *Cell Signal.* 2015 Nov 15;27(2):204-214 (ISSN) 0898-6568.
- **Gomathinayagam R***, Muralidharan J*, Ha J*, Lakshmi V, Dhanasekaran N. Hax-1 is required for Rac1-Cortactin Interaction and Ovarian Carcinoma Cell Migration. *Genes & Cancer.* 2014 May; 5(3-4):84-99 (ISSN)1947-6019.
- Todd LR, **Gomathinayagam R**, Sankar U. A novel Gfer-Drp1 link in preserving mitochondrial dynamics and function in pluripotent stem cells. *Autophagy.* 2010 Aug 9; 6(6): 821-2 (ISSN)1554-8627.
- Todd LR, Damin MN, **Gomathinayagam R**, Horn SR, Means AR, Sankar U. Growth Factor erv1-like modulates Drp1 to Preserve Mitochondrial Dynamics and Function in Mouse Embryonic Stem Cells. *MolBiol Cell.* 2010 Apr 1; 21(7):1225-36 (ISSN)1059-1524.
- Koduru S, Srinivasan S, Kumar R, **Gomathinayagam R**, Rohr J, Damodaran C. Identification of a potent herbal molecule for the treatment of breast cancer. *BMC Cancer.* 2009 Jan 30; 9(1): 41 (ISSN) 1471-2407.

- **Gomathinayagam R**, Sowmyalakshmi S, Mardhatillah F, Kumar R, Akbarsha MA, Damodaran C. Anticancer mechanism of Plumbagin, a natural compound, on non-small cell lung cancer cells. *Anticancer Res.* 2008 Mar-Apr; 28(2A): 785-92 (ISSN) 1791-7530.
- Baig I, Perez M, Braña AF, **Gomathinayagam R**, Damodaran C, Salas JA, Méndez C, Rohr J. Mithramycin analogues generated by combinatorial biosynthesis show improved bioactivity. *J Nat Prod.* 2008 Feb; 71(2):199-207 (ISSN) 0163-3864.
- **Rohini G**, Devi C.S. *Bacopa monniera* extract induces apoptosis on murine sarcoma cells (S-180), *in vitro*. *Phytotherapy Research.* 2008 Dec; 22(12): 1595-1598 (ISSN) 1099-1573.
- **Rohini G**, Ponnalagu Murugeswari, Namperumalsamy Venkatesh Prajna, Prajna Lalitha, Veerappan Muthukkaruppan. Matrix metalloproteinases (MMP-8, MMP-9) and the tissue inhibitors of metalloproteinases (TIMP-1, TIMP-2) in fungal keratitis patients. *Cornea.* 2007 Feb; 26(2): 207-211(ISSN) 0277-3740.
- **Gomathinayagam R**, Damodaran C. The Radiosensitization Effect of 2-Deoxy-D- Glucose on Human Glioma Cells. *Cancer Biol Ther.* 2006 Sep 17; 5(9): 1152-1153 (ISSN)1538-4047.
- **Rohini G**, Sabitha KE, Devi CS. *Bacopa monniera* Linn, modulates antioxidant and tumor enzyme status in fibrosarcoma bearing rats. *Indian Journal of Experimental Biology,* vol.42, Aug. 2004: 776-780 (ISSN)1949-2553.
- **Rohini G**, C. S. Shyamala Devi. Relevance of age specific references of PSA and its aid in enhancing the diagnostic efficiency of PSA in prostate abnormalities (BPH and Cancer) in correlation with biopsy. *Biomedicine,* 2003, 23 (162): 106-112 (ISSN) 0970-2067.

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