Biography of Dr. Mohammed Rachidi

Dr. Mohammed Rachidi received his PhD/ Doctorate Degree in Human and Molecular Genetics (with High Honors) at the **prestigious** "**Pasteur Institute**" (Paris, France), in the Department of Molecular and Cellular Genetics headed by the Professor François JACOB (Nobel Prize in Physiology/Medicine), where he studied the Cellular & Molecular Mechanisms underlying Brain Morphogenesis, Visual System development, CaMKinases & Biological Clock Function in Drosophila. Dr. Rachidi extended these Molecular Genetics works to Functional Genomics at Pasteur Institute and at Center National of Research Scientific CNRS and played key fundamental roles in different collaborative research projects with prestigious laboratories in Europe, Japan & United States. Remarkably, Dr. Rachidi collaborated with the Professor Michael **ROSBASH (Nobel Prize in Physiology/Medicine 2017)** in the Molecular Mechanisms of 2 genes involved in Circadian Clock. Dr. Rachidi published with Professor ROSBASH this important work in the EMBO Journal Entitled : "A New Gene encoding a putative Transcritpion Factor Regulated by the Drosophila Circadian Clock". Postdoctoral training & Assistant Professor with Professor Nicole LeDOUARIN at the **prestigious** "**College De France**" & Institute of Cellular & Molecular Embryology (Paris), Dr. Rachidi studied some Chicken & Xenopus molecules acting in Bone Morphogenetic Protein BMP signaling pathways and identified their Mouse & Human homologs involved in differentiation of specific domains of neuronal progenitors, in cerebellum development and Joubert syndrome (a form of cerebellar ataxia). These experiences of Dr. Rachidi in the Molecular Genetics and in several Animal Models were extended to Human Molecular Genetics of Down syndrome (DS) & to Molecular and Cellular Mechanisms underlying Brain morphogenesis of Trisomic & Transgenic Mouse Models of DS and also of numerous stages of Embryonic & Fetal DS patients to elucidate the Neurogenetic Basis of Functional alterations Associated with Mental Retardation. **Director of Research** in Human Molecular Genetics, Faculty of Medicine University Paris 5 (France), with High Honours for Notable Scientific Research Contributions, Breakthroughs & Discoveries in Drosophila & Mouse & Human Molecular Genetics & Neurosciences, Dr. Rachidi has vast experiences with different Research Interests in Modern Molecular Genetics, Neuroscience & Biomedical Research. Dr. Rachidi realized numerous "**Discoveries and Innovations**" to name a few: **(1)** Discovery of Quantitative Assessment of Gene Expression (QAGE) as a New Method in situ detecting Differential Overexpression of Candidate Genes for Mental Retardation in Down syndrome Brain Regions & for Other Diseases caused by Regionalized Quantitative Transcriptional Alterations for greater interpretation of functional processes driving gene expression. **(2)** Discovery of New Cerebellar & Cerebral Phenotypes in Transgenic mouse in vivo Library of Human Down syndrome Critical Region. **(3)** Discovery of a Novel Light Microscopy Technology as Powerful Tool in Developmental Biology & Biomedical & Neuroscience Research. **(4)** Discovery of New Genes involved in Brain Morphogenesis & in Visual System development; in Biological Clock; in Learning & Memory and in Mental Retardation in Down syndrome & Joubert syndrome. **(5)** Discovery of the First Proposed Model of Molecular and Cellular Mechanism Elucidating Neurogenetic and Neurocognitive Basis of Functional Impairments Associated with Mental Retardation in Down syndrome: in this Model gene dosage effects on transcriptional variations and the

nature of gene products and their functional relationships are explained with the different aspects of neuronal differentiation. Dr. Rachidi published numerous articles in highly **prestigious international journals with High Impact Factor** like EMBO, Genomics, DNA Research, Gene, Mechanisms of Development, Cytogenetics & Genome Research, Neuroscience Research, International Journal of Developmental Neuroscience, Cell Tissue Research, American Journal of Intellectual Developmental Disability, European Journal of Paediatric Neurology...and in numerous journals of Elsevier & Springer. He has also authored numerous Chapters & Books. Dr. Rachidi has been honoured worldwide as Invited Distinguished Speaker, Chairman or Invited Honourable Organizing Committee Member in numerous International Conferences, Seminars & Workshops in Europe, USA & Asia. Dr Rachidi received numerous Awards & Honors and He is an Editor, Associate Editor, Executive Editor & Editor in Chief in numerous International peer-reviewed Journals.

Research Interests

Dr. Rachidi has vast experiences with different Research Interests in Modern Molecular Genetics, Neuroscience & Biomedical Research, to name a few : Cellular & Molecular Mechanisms underlying Brain Morphogenesis, Visual System, Biological Clock, Synaptic Protein Targeting, Synaptic Plasticity, CaMKII & CAMGUK/MAGUK, Learning and Memory. Functional Genomics & Mechanisms controlling Transposition at Cell Cycle. Transcription, Protein Translation & Virus-Like Particle Formation. Bone Morphogenetic Protein BMP signaling pathways, Mouse and Human Homeobox Genes, Cell Fate Determination and Differentiation, Neuronal Progenitors in Cerebellum development and Joubert syndrome. Trisomy 21, Intellectual Disability, Candidate Genes, Expression studies, Genotype-Phenotype Associations, Trisomic and Transgenic Mouse Models of Down syndrome, Neurogenetic and Neurocognitive Basis of Functional Impairments Associated with Intellectual Disability. Drosophila & Mouse & Human.

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