

Aspects of Molecular Biology

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Editor's Note

Molecular biology as a study deals with the study of molecular basis of biological activity in the cells of various systems and the interactions between DNA, RNA, proteins, their biosynthesis and the regulation of these interactions at molecular level. Molecular Biology is an international open access, peer reviewed academic journal that publishes current discoveries and developments in all the related disciplines of Molecular biology. The current volume no. 5, issue 4 had published four research articles, three review articles and a commentary.

In this Issue

Wang and Zhou focused that ER-alpha 36 might be a new biomarker for diagnosing breast cancer briefly discusses about estrogen receptor alpha 36 developing resistance to tamoxifen and how icaritin, a small molecule drug in phase 2/3 clinical trials targets these specific breast cancer cells [1].

Rajanahalli in his studies explained DNA repair is more regulated in pluripotent stem cells shows repair mechanisms respond differently in embryonic stem cells, which are pluripotent compared to terminally differentiated cells. The author provides a clear summary about stringent and sophisticated mechanisms that are involved during DNA damage response/repair in pluripotent stem cells [2].

Elgazzaz et al. in their studies Vitamin D Receptor Gene and Type1 Diabetes show gene polymorphisms in vitamin D receptor is associated with the autoimmune disease type 1 diabetes. They conclude their results using an Egyptian population with varied genotypes and haplotypes for vitamin D receptor. Finally, a few combinatorial genotypes show protective effects against type 1 diabetes [3].

Gadhikar and Singh in their studies Activating senescence in cancer cells discusses Cancer treatments have taken a different approach by targeting cell senescence. The authors discuss about various genes and pathways (p53, CDKNA2, Chk1/2, p16INK4a, PTEN and telomerase) involved that can induce cell senescence in cancer cells. Developing therapies and drugs to regulate these genes can be vital in treating most forms of malignant cancers [4].

Babu et al. in their studies shows GATA repeats which helps in genome organization shows how the number of GATA repeats and their association to specific regions in the genome are involved in chromatin

organization and gene regulation in the rice genome. GATA repeats found across the animal kingdom provide genome regulation. Similar mechanisms might also be conserved across the plant kingdom [5].

Handa in his studies explains potential new antimalarial drug on the way deals. In the context to combat malaria, Plasmodium species have developed resistance to most known antimalarial including artemisinin, chloroquine, sulfonamides and pyrimethamines. The paper focuses on 1-deoxy- D-xylulose-5-phosphate (DXP), which is a rate-limiting step of 2-C-methyl-D-erythritol 4-phosphate (MEP) involved in type 2 fatty acid syntheses as a target for treating malaria [6].

Gokarn et al. in their studies shows how to clone the genes responsible for biosynthesis in siderophores? Reveals on a road trip to successfully clone Exo-MS siderophore biosynthesis genes namely, fxbA, fxbC and exiT in *E. coli* DH5a [7].

Abdulazeez et al. in their studies explains microsatellites paving the way to deduce genetic similarities of *Drosophila melanogaster* in Nigeria highlights. How similar are populations of *Drosophila melanogaster* in different areas? The authors study genetic similarities in the savannah zone of Nigeria. The compare genetic distances using microsatellite markers and show common ancestry playing a role in genetic diversity [8].

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