

Supplement – I

Trends in silent substitutions in mouse and human orthologs of high, medium and low GC groups

Recently Takahashi & Nakashima³⁰ has demonstrated that the silent substitution sites in mouse and human orthologous genes exhibit a negative correlation between themselves. With a view to examine whether the mouse-human orthologs in high GC, medium GC and low GC groups considered in the present study also exhibit the same trend, we calculated the GC-content of the silent substitution sites of mouse and human orthologous pairs using the method of this report³⁰. For this, only the human and mouse orthologous sequences, both having greater than 50 synonymous codons and gap free alignment regions with greater than 100 residues were considered. For each orthologous pairs, GC-content was calculated only for the silent substitution sites, i.e., the sites where synonymous substitutions had occurred between identical residues of the mouse and human orthologs. Again we used SPAST for all these calculations. Scatter diagram were then plotted to determine the correlation, if any, between the GC-contents of the silent substitution sites of mouse and human orthologous pairs in high GC, medium GC and low GC groups (Supplementary Fig.2, pink, green and blue color respectively). As can be seen from the supplementary Fig. 2, the negative correlation between the human-mouse orthologous pairs have been exhibited by the members of all three groups individually.