Proposed Paper Title - Bioinformatic Analysis of the evolution of Gulono Lactone Oxidase Gene (GULO) in mammals

Thesis Statement – While a good number of mammalian species are currently able to produce Vitamin C due to a functional GULO gene, some mammalian species possess GULOP – a pseudogene. Reconstruction of ancestral sequences can provide evolutionary insights into the mutations and gene conservations that are present in these gene across the several species analyzed.

Outline of Paper Section

1. **List of Figures and Tables**
2. **Introduction**
    - Gulono Lactone Oxidase Protein and its role in the Ascorbic acid pathway
    - Pseudogene and protein evolution
    - Hypothesis Statement
3. **Materials and Methods**
    - Sequence collection – **NCBI BLAST.**
    - MSA - Sequence Alignment and Trimming – **JALVIEW, MEGA**
    - Phylogeny Construction of Evolutionary Tree – (RaxML, Mesquite, FigTree)
    - Reconstruction of Ancestral Sequences (PAML)
4. **Results and Discussions**
5. **Conclusion**
6. **References**