

# Advanced organic chemistry assignment



An amino acid having the constitution shown has been isolated from horse chestnuts. Its configurations related to L-proline and has the R configuration at C-3. Write a stereospherically correct representation for this compound.

The addition of carbene by the cuprous chloride catalyzed the decomposition of digitoxin to 3, 4-dehydrato-L-proline, which led to a combination of CICS-3, 4-methyl-L-proline and trans-3, 4-methyl-L-proline in a proportion of 1: 3. 5. In addition, the CICS amino acid was the same as the natural amino acid secluded from seeds of 'Calculus parabola' by a modified technique.

Furthermore, detailed X-ray analysis of the hydrochloride of the CICS amino acid and of the trans amino acid gave complete bond angles, distances, and computer calculations. Afterwards, both the CICS and the trans amino acids approached a boat conformation through bicycle scheme; which proves the evaluation of the nuclear magnetic resonance (NMR) data. The pyridine ring of both the acids has all four carbons in a plane, whereas the nitrogen atom and the Cyclopes carbon are relocated to the same side of the plane.

In this matter, the conformation of the hetero ring varies significantly from all other natural pyridine amino acids. The synthesized horse-chestnut amino acid has a nomenclature of CICS-3, 4-methyl-L-proline, which proves that it is configurations related to L-proline. Furthermore, at C-3, the priority of the substituents decreases in clockwise direction, thus, it is R configuration. In conclusion, the stereospherically correct representation for this compound is:

Chapter 3 12. Trans-3-Alkyl-2-chlorofluorocarbons (alkyl = methyl, ethyl, 2-propyl) exist in the equatorial conformation.

In contrast, the corresponding O-methyl axioms exist as digital conformers. Explain the preference for the digital conformation of the axiom ethers. A sequence of trans-3-alkyl-2-chlorofluorocarbons was formulated and revealed to exist primarily in the dictatorial chair conformation. However, the formation of the axioms and various axiom products resulted in an incredible conformational inversion for the ethyl, spoilsport, and methyl systems. Furthermore, through the analysis of vicinal interpretation coupling constants, it is believed that these impounds exist mainly in the digital chair conformation.

To verify this, an X-ray crystallography was carried out, and the result undeniably shows that the configuration of chair with digital subsistent is favored in the solid state. It is presumed that the origin of this preference is the result of a strong hyperventilation stabilization of the axial conformation; also known as the Vainglorious anorexic effect". The reason why the axiom ethers prefer the digital conformation appears to be because to the  $\sigma^*_{C-O}$  and  $\sigma^*_{C-H}$  hypersonic]ignition between the kimono and color subsistent.

To define, hyperventilation is the weak interaction between sigma bonds with p orbital; it explains why alkyl subsistent stabilize carbonation's. In addition, as hyperventilation also exists in the ketene, the question that is raised is why the kimono ethers are more disposed to the digital conformation. The information that the kimono ethers assume the digital conformation designates that the hyperventilation stabilization is larger for the axioms than the stones. To sum up, this indicates that the  $\sigma^*_{C-O}$  component must be major, as a larger donor ability is expected for the axiom ethers.