**Study the effect of α toxin B1 on the liver enzymes in the presence of camphor**

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**ABSTRACT**

α toxin B1 is a common contaminant in a variety of foods including peanuts, cottonseed meal, corn, and other grains as well as animal feeds.α toxin B1 is considered the most toxic α toxin and it is highly implicated in [hepatocellular carcinoma](https://en.wikipedia.org/wiki/Hepatocellular_carcinoma) (HCC) in humans.Alanin aminotransferase (ALT) and aspartate aminotransferase (AST) are the most important enzymes in group of trans-amines. They are commonly measured clinically as [biomarkers](https://en.wikipedia.org/wiki/Biomarker) for liver health.So far scientists have done many researches about the various effects of camphor on these liver enzymes. They found that camphor can stop the effect of α toxin B1 and acts as a herbal fungi toxicant. α toxin B1 is a compound that causes liver injuries, but camphor protects the liver by repressing the effects of α toxin B1.

In this work we studied the effect of α toxin B1 on ALT and AST enzymes in the presence of camphor. The crystal structure of ALT (PDB entry 3IHJ) and AST (1IVR) were obtained from the Protein Data Bank (<http://www.rcsb.org./pdb>). Molecular docking technique was performed to investigate the probable interactions. B3lyp/6-31g method was used to determine docking data such as binding energy (Kb) and inhibition constant (Ki) values. Molecular docking studies conﬁrms the interaction between camphor and the enzymes.

**Key words:** α toxin B1, Liver Enzymes, Camphor, Molecular docking