

## Effect of $\alpha$ -lipoic Acid on Hemolytic Activity of Iranian Vipera Lebetina Venom

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### Abstract

**Background and Objective:** Snake venom is a complex of several toxic elements and enzymes. It has the agents with the ability to destroy cellular and subcellular membrane and to bring about hemolysis of red blood cells (RBC). Two types of direct and indirect hemolytic activity are known in snake venom in that phospholipase A2 is responsible for the indirect lysis. The aim of this study was to investigate the effect of  $\alpha$ -lipoic acid on hemolytic activity of Iranian Vipera Lebetina venom.

**Material and Methods:** Protein concentration of the crude venom of Vipera Lebetina was determined using bovine serum albumin as a standard. Direct hemolytic activity of venom was determined by using the Human RBC and Indirect hemolytic activity was assayed on RBC in the presence of egg yolk. Then,  $\alpha$ -lipoic acid with different concentrations in 100 mM Tris-HCL buffer was applied and its effect on hemolysis of RBC was studied.

**Results:** direct hemolytic activity on RBC was not observed while its indirect activity was detected to be increased proportional to different concentration of  $\alpha$ -lipoic acid. The range of indirect hemolysis was increased up to 60% by 60  $\mu$ M  $\alpha$ -lipoic acid.

**Conclusion:** Not only has  $\alpha$ -lipoic acid no inhibitory effects on the hemolytic activity of Iranian Vipera Lebetina venom but also has the positive effects on it.

**Keywords:** Iranian Vipera Lebetina Venom, Direct Hemolytic, Indirect Hemolytic,  $\alpha$ -Lipoic Acid, Phospholipase A2