

## **The Mechanism of Cinobufotalin Probed by Fluorescence Spectroscopy**

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Cinobufotalin has double effect of inhibiting tumor growth and stimulating the immune system, and is widely used in cancer clinic. The mechanism of action of which remains unknown. Human Serum Albumin(HSA) is the most abundant carrier protein in blood circulation. The interaction between cinobufotalin injection and HSA in physiological buffer (pH 7.4) was investigated by fluorescence spectroscopy. The fluorescence spectrum of the interaction between different doses of cinobufotalin and HSA showed that the fluorescence intensity of the reaction solution firstly increased and then decreased with the increase of dose of cinobufotalin injection, which was caused by fluorescence intensity stack and fluorescence quenching. The results of fluorescence spectrum at three temperature (300K, 310K, 315K) showed the degree of binding at 315K is higher than that at 310K and 300K. The results indicate that it is obvious that the effect of the different doses of cinobufotalin on the interaction, and the combination is better under proper high temperature than under low temperature. In addition, from the analysis of the experiment data, the fluorescence quenching mechanism for HSA through cinobufotalin injection binding is coexistence of static and dynamic quenching, but the dynamic quenching is dominant.