

B-3**Effects of Various Anions on the Tolaasin-induced Hemolysis**

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Tolaasin is a bacterial paptide toxin which is produced by *Pseudomonas tolaasii*. It forms pores in the cellular membranes, causing the brown blotch disease on the cultivated oyster mushroom. Previously, we showed that tolaasin-induced pore formation required the multimerization of tolaasin molecules. In order to measure the ionic effect on the tolaasin multimerization, the time course of tolaasin-induced hemolysis was measured in the presence of various cations and anions. The addition of anions, such as CO_3^{2-} , NO_3^- , and H_2PO_4^- , increased the hemolytic activity of tolaasin and the time needed to hemolyze 50% of RBCs was decreased while cations showed little effect on the increase in hemolysis. When the effect of CO_3^{2-} was measured at various concentrations, the maximal effect on the hemolytic activity was observed at near 40 mM. At the concentrations of CO_3^{2-} below or above 40 mM, the hemolytic activity of tolaasin was similar to that of the control condition. The stimulatory effect of CO_3^{2-} was increased when tolaasin was preincubated with CO_3^{2-} in the absence of RBCs. Other anions showed very similar effects. These results suggest that anions facilitate the multimerization of tolaasin and, thus, increase in the tolaasin-induced hemolysis.