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Training and accountability in underwater crime scene investigations

Mack S House Jr

Crime Scene Investigator Diver Technologist International, USA

The increase diver involvement in conducting underwater investigations has led to an increase in diver mortality. Inadequate training in Safe Diving protocols and operations has been one of the contributing factors regarding this concern. As an investigative team, poor training in Human Anatomy and Physiology have been not only compromised diver safety, it is responsible for critical evidence being missed or not considered. The preservation of evidence and chain of custody have also been neglected. In addition to these important facts, biological hazards have become a serious medical concern for the diver as well. Lack of training in this area compromises the safety of the diver, dive team, land based CSI personnel, first responders and law enforcement officers. The growing demand for education and accountability in this unique branch of forensics has led to an increased need for certified divers in the field with extensive knowledge of Crime Scene Investigation protocols utilized by land based investigative teams. The implementation of land based protocols and procedures must be adapted for the underwater environment by substituting various methods and equipment as to provide for the best investigative procedure as humanly possible. The term "Technologist" is more definitive in that the Technologist specializes in the application of specialized diving procedures and safe diving practices as well as specific scientific knowledge and understanding. Solving both theoretical and practical problems associated with crime scene investigations and forensic science.

csidt1@gmail.com

The effect of *Nauclea latifolia* leaf extract on alpha amylase isolated from paddy rice and *Aspergillus niger*

Nana Owusu Banahene

University of South China, China

Nauclea latifolia is a unique plant that has been used for the treatment of various ailments such as diabetes mellitus, malaria and hypertension. *Aspergillus niger* is a filamentous ascomycete fungus that is ubiquitous in the environment and has been implicated in opportunistic infections of humans. This study was carried out to determine the inhibitory effect of *Nauclea latifolia* leaf extract on alpha amylase isolated from *Aspergillus niger* and paddy rice. The extraction was done using absolute methanol. Protein concentration of the enzyme was determined using the Biuret method. The effect of substrate concentration K_m , V_{max} , effect of pH, temperature and the effect of the extract on enzyme activity were determined using starch hydrolysis method. The protein concentrations of the alpha amylase from the paddy rice and *Aspergillus niger* were 0.4165 mg/mL and 0.4625 mg/mL respectively (before dialysis) and that of alpha amylase from both paddy rice and *Aspergillus niger* were 0.0494 mg/mL and 0.40945 mg/mL respectively (after dialysis). The pH optimum was 6 for the alpha amylase from the paddy rice and 5 for *Aspergillus niger*. The optimum temperature for paddy rice alpha amylase was 60°C and that of the *Aspergillus niger* was 50°C. The results also show that there was a reduction in K_m and V_{max} when the alpha amylase from both sources was treated with the plant extract. It can therefore be concluded that *Nauclea latifolia* leaf extract act as uncompetitive inhibitor on alpha amylase, however, binding studies should be done to confirm.

nanaowusubanahene@yahoo.com