

Research seeks to end need for blood of horseshoe crabs

By Wu Cheng-ting and Jake Chung / Staff reporter, with staff writer



Kinmen County Fisheries Research Institute member Li Chin-chao holds a horseshoe crab on Wednesday.

Photo: Wu Cheng-ting, Taipei Times

The Kinmen County Fisheries Research Institute and National Tsing Hua University are collaborating on a research project aimed at eliminating the need to use horseshoe crab blood in tests to detect bacterial contamination in drugs and intravenous devices as well as other medical items.

A horseshoe crab blood extract, specifically the substance tachyplesin, is used in Limulus amoebocyte lysate (LAL) solutions and LAL tests, as well as in biomedical industries for toxin-free surgical sutures and in the development of wound dressings for burn victims.

However, it takes a liter of horseshoe crab blood to produce 20cc of tachyplesin and research by US universities has shown that horseshoe crabs faced a 2 to 3 percent chance of dying if one-10th of their blood is extracted.

A research team headed by university professor Margaret Chang (張大慈) aims to employ genetic engineering technology to “plant” genes that produce tachyplesin in the Escherichia coli virus in the hopes that the E. coli virus’ gram-negative nature will stimulate production of tachyplesin.

If successful, the research might remove the need to extract blood from horseshoe crabs entirely, the institute said.

The team arrived in Kinmen on Wednesday to draw the first batch of horseshoe crab blood to be used in research.

Institute staff member Li Chin-chao (黎錦超) said the research would be the first in the nation aimed at helping promote the conservation of horseshoe crabs.

High demand for horseshoe crab blood, coupled with its limited supply put its price at about US\$15,000 per liter.

