

## **Biomedical Division**

### **PSDAS CPD Activity – Technical Seminar on Advanced LAL Methodology and Application on Medical Devices for Biomedical Engineers**

**Miss Christine KM HO**

**Mr Bryan MK SO**

A PSDAS CPD seminar on “Advanced LAL Methodology and Application on Medical Devices for Biomedical Engineers” was jointly organized by the Biomedical Division, Electronic Division and the Hong Kong Medical and Healthcare Device Manufacturers Association on 13 Mar 08 at Hong Kong Productivity Council. We were glad to have Ms Laurie E FIFE, Manager of Associates of Cape Cod Inc as the seminar speaker.

LAL, stands for Limulus Amebocyte Lysate, is an aqueous extract of blood cells from horseshoe crab. It forms a clot in the presence of endotoxin on Gram-negative bacteria. The seminar started with a demonstration on using LAL to test the endotoxin content in tap water and pure water. The history and discovery of LAL were then introduced. Seawater was rich of bacteria, thus horseshoe crab was constantly threatened with infection. LAL in horseshoe crab’s blood could bind and inactivate bacterial endotoxin. The clot formed would provide wound control by preventing bleeding and forming a physical barrier against additional bacterial entry and infection.

Horseshoe crabs were collected and the bleeding process was carried out. Up to 30% of the blood would be collected. The horseshoe crab would be recover in two to three months. LAL would then be extracted from the collected blood and LAL testing kit would be manufactured.

The biochemical cascade of the reaction was presented. The LAL products were engineered to increase the natural sensitivity. Different LAL test methods, including gel clot, turbidimetric and chromogenic methods were particularly discussed. The difference between “sterilization” and “depyrogenation” were explained. In the rest of the seminar, bacteria endotoxin test (BET), LAL test validation, extraction protocol of critical surfaces of medical devices and some critical points in LAL test were studied.

The activity was adjourned by a question-and-answer session and a souvenir was presented to Ms FIFE by Mr Bryan SO, the Honorary Secretary of the Biomedical Division.



Ms FIFE was demonstrating the simple LAL experiment Presentation of a souvenir to the speaker (from left to on tap water. right: Bryan SO, Ms Laurie FIFE).



Participants of the seminar.