

CHAPTER IV

Conclusion

In this investigation tetanus toxoid microcapsules were prepared by interfacial deposition technique. Lecithin was used as a polymeric membrane and carboxy methylchitin was used as a stabilizer. Tetanus toxoid microcapsules were separated by centrifugation at 15,000 rpm. The mean diameter of the particles was 0.37 micrometers, the median was 0.33 micrometers and the mode was in range 0.21-0.40 micrometers with 51.36% frequency.

The potency testing of adsorbed tetanus toxoid (TT), tetanus toxoid microcapsules (TTM) and mixture of tetanus toxoid and tetanus toxoid microcapsules (TT+TTM) were as follow : TT, TTM and TT+TTM could protect mice from challenging with tetanus toxin during day 7-90, and 15-180 and day 7-180 respectively. TTM and TT+TTM could protect mice from day 15 until 180 and the efficacy of vaccine was not different.

The potency test for TT, TTM and TT+TTM stored for 0, 3, 6 and 9 months in stability test showed that there was no significant difference in number of survived mice in each month period. All of tetanus toxoid preparations were stable during the nine month period.

The antibody titers of sera from mice immunized with tetanus toxoid preparations were determined by ELISA. The result was similar to the potency

testing. Adsorbed tetanus toxoid showed the shortest onset of immune response. The antibody titer of TT was 50 that was detected at day 7 after immunization and increased to 1250 at day 45-60. After that the antibody titer was rapidly decreased to 250 at day 75-90 and then decreased to 10 at day 120-180. TTM showed a longer onset than TT, and the antibody titer was first detected as 250 at day 15 and then increased to 1250 at day 30 until 180. At day 75, the antibody titer of TTM was highest (6250). In TT+TTM, the antibody titer was first detected at day 7. The onset of immune response was the same as that of TT. After that the antibody titers increased to 250 at day 15 and 1250 at day 30-180. At day 60, the antibody titer was highest (6250).

The stability of tetanus toxoid preparation stored for 0, 3, 6 and 9 months were evaluated by the determination of antibody titers, there was no significant difference in antibody titers of mouse anti-tetanus sera both among each month period and each time period.

In immune response, tetanus toxoid and also the mixture of tetanus toxoid and tetanus toxoid microcapsules showed shortest onset. The longest duration of immune response likely to be produced by tetanus toxoid microcapsules. According to the level of antibody titer, the higher antibody titers were detected in TTM and TT+TTM groups.

The correlation of potency testing and antibody titers were shown as the following results. For TTM group, the antibody titers was highest during day 30-180 and all of mice were survived during day 30-180. For TT group, only at day 30 the

antibody titer was 250 and the number of survived mice was 10 but there were 2 out of 10 survived mice having paralysed symptom.