STUDIES ON THE PURIFICATION OF HABU VENOM TOXOID

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In previous report, Sawai et al. (1965) reported that habu venom which was treated with dihydrothioctic acid was good antigenic for experimental animals. According to those results, Sawai et al. (1967) made a field trial to immunize

Antibody level in guinea pigs immunized with various
kinds of habu toxoid

No.	Reference toxoid			Alcohol precipitated toxoid		
	2.5mg	1.25mg	0.625mg	2.5mg	1.5mg	0.625mg
1	6.8** (8.4)***	11.5 (15.3)	8.9 (15.3)	15.0 (2.1)	15.2 (6.8)	5.4 (3.4)
2	5.6 (5.2)	6.0 (6.0)	4.0 (6.0)	28.5 (4.0)	15.2 (5.6)	7.2 (5.0)
3	16.0 (8.0)	11.5 (8.4)	7.6 (8.4)	18.0 (6.8)	8.0 (4.0)	7.2 (7.0)
4	5.6 (8.0)	4.8 (3.8)	4.0 (4.8)	11.2 (8.4)	17.9 (19.0)	11.2 (13.2)
5	6.8 (8.0)	7.2 (8.4)	6.4 (8.0)	12.8 (4.5)	24.8 —	5.4 —
6	6.8 (4.8)	9.6 (8.0)	7.6 (8.4)	24.8 (14.0)	11.2 —	9.6 (3.4)
M	7.9 (7.1)	8.4 (8.3)	6.4 (8.5)	18.4 (6.6)	15.4 (8.9)	7.7 (6.4)

No.	Crude-formalin toxoid			DHTA toxoid		
	2.5mg	1.25mg	0.625mg	2.5mg	1.5mg	0.625mg
1	22.0* (18.5)	11.2 (7.2)	11.2 (3.4)	11.4 (2.4)	2.4 —	8.4 (1.2)
2	11.2 (18.5)	5.4 —	9.6 (4.8)	11.4* (1.2)	4.2 —	4.8 (1.2)
3	11.2 (14.0)	8.0 (9.6)	9.6 (2.4)	11.4 (1.2)	3.6 —	3.0 (1.2)
4	16.0 (14.0)	8.0 (6.0)	3.8 (3.4)	3.0 (1.4)	4.8 (1.2)	5.8 —
5	8.0 —	8.0 (6.0)	3.8 (2.1)	4.2 (1.7)	8.4 (1.2)	11.4 —
6	11.2 (8.4)	8.0 (6.0)	8.0 (4.8)	5.8 (1.2)	4.2 (1.2)	3.0 —
M	13.3 (14.7)	8.1 (7.0)	7.7 (3.5)	7.9 (1.5)	4.6 (1.2)	6.1 (1.2)

* Excluded from the calculation. ** anti HR-1 units, *** anti HR-2 units.

M: mean value of 6 samples.

residents of habu infested areas in the Amami and Ryukyu Islands. Okonogi et al. (1968) reported a new type of purified habu venom toxoid treated alcohol and formalin. Sadahiro et al. (1968) also reported that the antigenicity of formalized habu venom toxoid was better than that of dihydrothioctic acid toxoid. This report concerns the purification of havu venom by ethanol precipitation, inactivation by formalin and its antigenicity for experimental animals.

The habu venom is dissolved in phosphate buffer solution at pH 7.1 in amount of one per cent. The solution is then added with ethanol in amount of 30 per cent and allowed to stand at -10 degree C for 4 hours. And then it is centrifuged at 10,000 rpm for 20 minutes. The precipitates are redissolved in phosphate buffer in amount of 5 per cent.

The purified solution of habu venom is added with formaline in one percent and allowed to stand at 37 degree C for 10 days, and then it is ultrafiltrated after the formalin is dialized.

One group of guinea pigs were immunized subcutaneously with 3 dose of 1 ml of the toxoid contained 2.5 mg of protein at an interval of 4 weeks. In the other two groups, 0.5 ml and 0.25 ml of the toxoid contained 1.25 mg and 0.625 mg of protein were used as each dose of immunization. In controls, 3 kinds of toxoid were used. Those are the crude venom toxoid inactivated by DHTA, the crude venom toxoid inactivated by formalin and the reference toxoid prepared with crude venom and inactivated by formalin by NIH of Japan. All the toxoids contained the same amount of M/5 $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$ and M/5 $\text{Na}_3\text{PO}_4 \cdot 12\text{H}_2\text{O}$ as adjuvant.

The experimental results showed that the nitrogen content in alcohol precipitated venom reduced to half of crude one without significant loss of toxicity. Mice survived without any toxic effects after the injection of 5 mg of formalin toxoid. As shown in the table, the antibody titer of anti HR-1 were higher in the group of the immunizing dose of 2.5 mg and 1.25 mg of the alcohol precipitated toxoid than the other group, whereas those of anti HR-2 titer were the same level as compared with other group.

A RESEARCH ON THE SENSORY OF TASTE OF NEW GUINEA NATIVES

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To make analytical abstraction of the basic principle on nutrition and food taste of New Guinea natives living in West Pacific area; and also to find out the idealistic eating-habit pattern suitable for the natives to give an indicator for the improvement of their nutrition and food consumption.

The reason for selecting New Guinea natives for this research is that the oldest type of the human race that is existing at present should be analyzed as