

6141

Action of Bufotoxins.

K. K. CHEN, H. JENSEN AND A. L. CHEN.

From the Lilly Research Laboratories, Indianapolis, and Johns Hopkins Medical School, Baltimore.

Wieland and Alles¹ isolated bufotoxin from the skin of *B. vulgaris* or *B. bufo bufo*. In our study of *Ch'an Su* and the secretions of 10 additional species of toads, we obtained a bufotoxin from the dried venom of each species. The word bufotoxin is used generically for the same reason as given for bufagins. Chemically, the bufotoxins are formed by the conjugation of one molecule of suberyl-arginine with one molecule of a specific bufagin found in the respective secretions. Their pharmacological action is similar to that of bufagins, being different only in degree (Table I), as shown by the

TABLE I.

Bufotoxin from	m. p.	Elementary Analysis			Minimal Emetic Dose in Pigeons	Minimal Emetic Dose in Cats	Average Fatal Dose in Cats
		C	H	N			
	°C.	%	%	%	mg. per kg.	mg. per kg.	mg. per kg.
<i>Ch'an Su</i>	200	64.05	8.31	7.60	0.200	0.125	0.36 (9)*
<i>Bufo bufo bufo</i>	202	60.91	8.21	7.39	0.200	0.125	0.30 (10)*
<i>B. marinus</i>	200	63.09	7.98	7.55	0.200	0.125	0.38 (10)*
<i>B. arenarum</i>	194-195	61.80	7.95	7.61	0.200	0.150	0.41 (13)*
<i>B. bufo gargarizans</i>	195-197	63.54	8.08	7.78	0.250	0.125	0.49 (10)*

* Figures in parentheses indicate the number of cats used for the determination of the dose.

systolic standstill in the myocardiogram of frogs, typical changes in the electrocardiograms of cats, and emesis in cats and pigeons. Locally, they are bitter to the taste.

¹ Wieland, H., and Alles, R., *Ber. deut. chem. Gesell.*, 1922, **55**, 1789.