ISOLATION OF ANTITUMOR PROTEINS ABRIN-A AND ABRIN-B FROM *Abrus precatorius*

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Two toxic proteins were purified from the seeds of *Abrus precatorius* by DEAE A-50 and Sepharose 4B chromatography. One of them does not bind to the Sepharose 4B column (Abrin-b) and the other (Abrin-a) is eluted with 0.2 M galactose. The amino acid compositions and tryptic maps of these two proteins were similar, but not identical. The molecular weights estimated by SDS-gel electrophoresis were 67,000 for abrin-a as compared with 65,000 for abrin-b. In the presence of mercaptoethanol, both abrin-a and abrin b gave rise to two bands.

The lethal doses of abrin-a and abrin-b for mice as recorded within 48 h were 10 and 25 μg per kg of body weight, respectively. Abrin-a at 0.8 μg per ml concentration level agglutinated human O-type erythrocytes, whereas abrin-b showed no such activity. Abrin-a at 5 μg per ml concentration level agglutinated both the Sarcoma 180 cells and Ehrlich ascites tumor cells, but it required 150 μg per ml for abrin-b. Both proteins at sublethal doses could inhibit the growth of Ehrlich ascites tumor cells which were injected simultaneously with the proteins.

^{131}I-abrin-a and ^{131}I-abrin-b were able to bind Sarcoma 180 cells, and thebinding of abrin-a could be inhibited by lactose, raffinose, galactose and rhamnose, but none of the 15 sugars tested inhibited the binding of abrin-b.