A SIMPLE AND EFFECTIVE METHOD OF PREPARING ROTAVIRUS ANTIGEN IN PREPARATIVE QUANTITIES

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Clay minerals of the alumosilicate group (bentonite, caclinite, ceolithe) possess high dispersity and great absorbtion capacity. Some of them were shown to absorbe enteroviruses (*1,3*) and bacteriophages (*2*). Bentonite of Crimean origin was fractionated, saturated by sodium ions and suspended in distilled water (pH 6.3—6.6). To absorb rotavirus SA-11 small-particle fraction of bentonite was added to the culture fluid to a concentration of 0.05 = (w/v). Preliminary trial on absorbtion of SA-11 virus to bentonite particles revealed that the greastest saturation was achieved when the reaction mixture was 4.5—5.0 (93.8% absorbtion). Therefore, pH of this mixture was adjusted to 4.4, strongly shaken for 5—10 min and then centrifuged at low speed. The pellet was washed with distilled water (pH 4.5) and recentrifuged. Elution of rotavirus was performed with 0.05 mol/l Tris-HCl (pH 8.2). The protein content of the eluate was determined by the method of Lowry, tested for infectivity and examined by electron microscopy. the quantity of total protein was 0.32% after 500-times concentration of virus-containing material. Apparently, this was due to irreversible fixation of heterologous proteins by bentonite, leading to a sufficient purification without significant decrease of infectivity. Electron microscopy by negative staining revealed virions like to double capsid full particles and a few empty particles.

The presented results confirm that bentonite can be used for rapid and effective concentration of rotaviruses.

Table. Concentration of simian rotavirus SA-11 by bentonite

Material	Vol ml	Protein* mg/ml	Infectivity TCD_{50}/ml	Antigen titre in HI
Original virus containing fluid	500.0	0.18	10^7	320
Concentrated virus (eluate)	1.0	0.64	10^9	40 960

* Protein was measured by Lowry (1951)

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