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GROWTH OF CONTAGIOUS PUSTULAR DERMATITIS VIRUS OF SHEEP AND GOATS IN DIFFERENT CELL CULTURES

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It was established that contagious pustular dermatitis virus of sheep and goats can be isolated on cell cultures of chicken embryos. However, the cytopathic effect (CPE) is seen faster in lamb kidney primary cell culture. Thus, it can be concluded that chicken embryo cell cultures may be used as a medium for isolating and propagating contagious pustular dermatitis virus.

Key words: virus, cell cultures, dermatitis

INTRODUCTION

Data from the available literature (Ergin and Koklu, 1987; Kim et al., 1987.) are not in accordance concerning the suitability of cell cultures for isolating contagious pustular dermatitis virus (CPD) of sheep and goats from specimens sent for laboratory analysis. Cell cultures originating from sheep and cattle are usually used fort hat purpose (Rossi and Balloni, 1991).

The aim of this study was to determine the possibility of isolating the agent of CPE in chicken embryo cell cultures and to compare the results with those obtained in lamb kidney primary cell cultures.

MATERIAL AND METHODS

Lamb kidney primary cell cultures were prepared from lambs killed in a slaughter-house. The suspension of disperse cells was centrifuged for 10 min. at 800 rp/m After centrifugation the supernatant was discarded and cells which remained were resuspended and again centrifuged. To the sediment was added 2ml of Eagle medium.

Nine day old embryos were used to obtain primary disperse cell cultures from chicken embryos.

Scabs from sick sheep were used as the source of CPD virus. The suspension made with Eagle medium was centrifuged; the supernatant discarded and antibiotics added. After standing for 30 min. at room temperature lamb kidney cell cultures were inoculated with 0,2 x 10-4 of supernatant. Inoculated cultures

were kept for 30 min. at 37^{0}C in order to adsorb virus to the cells. Then Eagle medium was added to the dilution of 3ml and the culture was incubated at 37^{0}C.

Ten (10) lamb kidney primary cell cultures and 10 chicken embryo cell cultures were inoculated with CPD virus.

As a control we used 4 noninoculated cell cultures. The presence of the CPD virus was established by the cytopathic effect (CPE) method.

RESULTS AND DISCUSSION

The results of our study are shown in Tables 1 and 2.

Table 1. Lamb kidney primary cell cultures after inoculation with CPD virus

culture number	hours 24	48	72	84	96	102
1	—	—	+	+	++++	++++
2	—	—	+	+++	++++	++++
3	—	—	+	+	++++	++++
4	—	—	+	+++	++++	++++
5	—	—	—	+	++++	++++
6	—	—	—	+	++++	++++
7	—	—	—	+	+++	++++
8	—	—	+	+	+++	++++
9	—	—	+	+++	++++	++++
10	—	—	+	+++	++++	++++

Table 2. Chicken embryo cell cultures after inoculation with CPD virus

culture number	hours 24	48	72	84	96	108	120	132	140
1	—	—	+	+	++++	+	+++	++++	++++
2	—	—	+	+++	++++	+	+++	++++	++++
3	—	—	+	+	++++	+	+	+++	++++
4	—	—	+	+++	++++	+	+	++++	++++
5	—	—	—	+	++++	+	+	++++	++++
6	—	—	—	+	++++	—	+	+++	++++
7	—	—	—	+	+++	+	+	++++	++++
8	—	—	+	+	+++	+	+	++++	++++
9	—	—	+	+++	++++	+++	++++	++++	++++
10	—	—	+	+++	++++	—	+	+++	++++

It was observed that cytopathic effect in lamb kidney cell cultures could be observed 72^h after inoculation of CPD virus. They became significant after 84^h and were complete after 96^h.

However, on chicken cell cultures CPE was seen to 108h after inoculation of CPD virus. It became significant after 120^h and was complete after 132^h.

Concerning these results, it could be concluded that CPD virus can be isolated on chicken embryo cell culture (Rossi, Silvagni, Casaleno, 1992). However, the results show that CPE is observed earlier on lamb kidney cell cultures, which indicates that sheep tissue is more susceptible to the action of CPD virus (Vdovina, 1990) than chicken embryo cell cultures.However, bearing in mind that CPD virus can eventually be isolated from chicken embryo cell cultures, it should be possible to realy on this culture as a medium for isolating the mentioned virus.

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IZOLOVANJE VIRUSA KONTAGIOZNOG PUSTULOZNOG DERMATITISA OVACA I KOZA NA RAZLIČITIM KULTURAMA TKIVA

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SADRŽAJ

Ustanovljeno je da se virus kontagioznog pustuloznog dermatitisa ovaca i koza može izolovati i na kulturi ćelija kokošjeg embriona, a ne samo na tkivima poreklom od ovce i koze.

Citopatogeni efekat, međutim, brže nastaje na primarnoj kulturi jagnjećeg bubrega. Zaključak je da i kultura ćelija kokošjeg embriona može da služi kao medium za izolovanje virusa kontagioznog pustuloznog dermatitisa ovaca i koza.