



One from the Espana strain gave restriction fragment patterns identical to those of the parent strain when tested with 5 different endonucleases.

In contrast to these findings, Dr Marennikova has described 5 stable, cloned, white pock isolates, 3 from the Congo 8 strain and 2 from the Copenhagen strain, which had some phenotypic properties different from monkeypox and characteristic of whitepox. The properties tested were: virulence for chick embryo, suckling mice and rabbit skin; ability to grow in PEK cells, temperature sensitivity of viral growth, HA activity and antigenic specificity.

She has also described the isolation of monkeypox virus from hamsters infected with strain Congo 8. All twenty isolates up to the second week were wild type virus, but 4 out of 15 isolates which had been obtained between the 2nd and the 6th week after inoculation produced white pocks. The white pock isolates had the same low pathogenicity for mice, chick embryo and rabbit as whitepox virus and were able to replicate in PEK cells.

There are thus two sets of observations of white variants of monkeypox virus which are contradictory. The general question of white pock variants of orthopoxviruses was discussed. Experience with white pock variants of rabbitpox and cowpox viruses has shown that a spectrum of mutants with different phenotypes may be obtained from a parental wild type clone. It is clearly important to resolve as quickly as possible the situation of white pock variants of monkeypox virus.

## 6. Recommendations

### A. Investigation of white pock variants of monkeypox virus

1. Dr Marennikova's white pock clones should be further characterized by polypeptide and DNA analysis.
2. Attempts should be made to repeat Dr Marennikova's observations in other centres using the same monkeypox stocks as Dr Marennikova used and other stocks of the same monkeypox strains. Any white pock clones isolated in these experiments should be characterized by polypeptide and DNA analysis.
3. The potential of PEK cells as a selective system for variola-like viruses should be investigated.

### B. Other

1. WHO should provide support for the production of a series of maps of orthopoxviral DNAs.
2. Research should be undertaken on the production of high titre monoclonal antibody specific to certain poxviruses, which could be useful for diagnostic purposes.
3. WHO should maintain liaison with and support a group of workers with experience in the laboratory study of poxviruses and arrange for them periodically to review the current situation in the poxvirus field.
4. Research on orthopoxviruses should be conducted at a level of security appropriate to the particular work.
5. Whatever the results of the laboratory studies, the public health importance of whitepox viruses can be determined only by long-term surveillance, particularly in Zaire, and it is strongly recommended that such surveillance should be maintained.
6. The group supports the proposed field study in Zaire, which is designed to define further the natural history of monkeypox.

ANNEX 1

Informal Consultation on Monkeypox, Whitepox and Related Poxviruses

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