

## **Some Issues Regarding Maintenance of Variola Virus Clone Libraries and Strains**

**L.S. Sandakhchiev, S.S. Marennikova, E.F. Belanov, S.N. Shchelkunov, A.N. Sergeev, I.G. Drozdov**

*SRC VB VECTOR, Koltsovo, Novosibirsk region, Russia*

It was prior to the meeting WHO Advisory Committee on Variola Virus Research meeting, which took place on November 4-5, 2003 in Geneva, that Prof. L.S. Sandakhchiev brought up the issue of clarifying the recommendation of the Ad Hoc Committee on Orthopoxvirus Infections cited in below.

In particular, the 1994 report of the Ad Hoc Committee on Orthopoxvirus Infections (WHO/CDS/EVI/943 dated September 9, 1994) in Paragraph 4 in Section Summary of Recommendations notes that “each repository should hold a duplicate set of archived material”. We think the meaning of this statement should be specified: does this mean sharing clone /amplicon libraries between the two WHO Collaborating Centers or just keeping clones/amplicons at each of the two Centers in duplicate?

As far WHOCC at Koltsovo is concerned, we have established a collection of clones and amplicons that is kept in duplicate at two locations at SRC VB VECTOR. However, if the above recommendation of the 1994 Ad Hoc Committee on Orthopoxvirus Infections assumed that each of the two WHOCC should have a library of clones and amplicons obtained at either WHOCC, it is necessary to conduct a set of practical measures, including a corresponding WHO appeal to the export control authorities of both countries in order to facilitate material transfer.

Given the above, we believe it makes sense to discuss this issue to clarify it.

Another important issue that we would like to raise is the need for conducting experiments at the two WHO Collaborating Centers using a standard set of strains of variola virus as well as standard operating procedures (SOP's) to ensure the reproducibility of results obtained at both WHO Collaborating Centers. Historically, Butler (variola minor) and Harvey (variola major) have been considered reference strains for variola virus. In recent studies conducted in collaboration with the WHOCC at CDC, Dr. John Huggins, Dr. Michael Bray from the US side and Dr. Evgeny Belanov, Dr. Alexander Guskov from the Russian side agreed on using Butler and Congo-9 as so-called “mandatory” strains (along with using other strains that were different at both repositories) in their antiviral research experiments. However, the latter two strains should be supplemented by a representative of Asian pathogenic strains of variola virus that, unlike strain Harvey, had not undergone numerous passages in different biological systems. For this set of three so-called mandatory strains, basic biological and molecular and genetic characteristics should either be available or additionally generated as well as additional historical data regarding their origin should be obtained from WHO archives. In our opinion, involving these mandatory strains in antiviral research experiments would significantly facilitate and accelerate the process of comparison, evaluation and choice of an optimal efficient anti-smallpox drug.