

Ответ ВОЗ на запрос о предоставлении фотографий вируса
натуральной оспы, сделанных на образце больного пациента. 2001
г.

WORLD HEALTH ORGANIZATION



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In reply please refer to: S2/180/4
Prière de rappeler la référence:

Your reference:
Votre référence:

Dr Stefan Lanka
Ludwig-Pfaustr. 1b
70176 Stuttgart
Allemagne

3 December 2001

Dear Dr Lanka,

Thank you for your letter and your interest in smallpox. The demonstration by electron microscopy of orthopoxvirus virions in clinical samples of smallpox patients, and the use of electron microscopy for the diagnosis of smallpox can be found in the following references:

Nagler, FPO and Rake, G (1948) The use of the electron microscope for the diagnosis of variola, vaccinia and varicella. J. Bacteriol., 55: 45-51.
Van Rooyen, CE and Scott, GD (1948) Smallpox diagnosis with special reference to electron microscopy. Canad. J. Publ. Hlth., 39: 467-477.

The development of negative staining by Brenner and Horne in 1959 made electron microscopy more feasible as a regular diagnostic procedure. This was demonstrated by Cruickshank, JG, Bedson, HS and Watson, DG (1966) Electron microscopy in the rapid diagnosis of smallpox. Lancet, 2: 527-530.

In 1971, electron microscopy became an integral part of the diagnostic procedures used by the WHO Collaborating Centres in Atlanta and Moscow.

At the time these reports were published, procedures for the biochemical characterization of variola virus particles, which allowed to distinguish them from other members of the orthopoxviruses were not yet available. These virions were therefore characterized on the basis of biological criteria, such as pock morphology on the chorioallantoic membrane of developing chick embryos, and ceiling temperature. By these criteria, the viruses causing smallpox were shown to have characteristic properties, which distinguished them from other orthopoxviruses.

Before smallpox was eradicated, many clinical specimens were collected and stored in different laboratories. These collections were later transferred to either one of the two WHO Collaborating Centres in Atlanta or Koltosvo, where they are still safely stored. As restriction enzyme analysis and later direct DNA sequencing became available as a means of characterizing viral genomes, several isolates were analyzed by these new techniques.

The results of these studies showed that the viruses isolated from smallpox patients were all very closely related and different from other orthopoxviruses, confirming their classification as a separate species, as initially proposed on the basis of biological criteria.

Yours sincerely,

Dr Guénaél Rodier
Director
Department of Communicable Disease
Surveillance and Response

В 2001 году, под предлогом возможной угрозы террористической атаки с использованием биологического оружия в виде вируса натуральной оспы, Европейские страны и США начали закупать миллионы доз вакцин от натуральной оспы, чтобы в быстром и принудительном порядке вакцинировать население. Доктор Штефан Ланка сделал запрос во Всемирную Организацию Здравоохранения. Он просил организацию предоставить фотографии вируса натуральной оспы, сделанные на образце больного пациента. В своем ответе ВОЗ сослалась на 2 публикации.

«Уважаемый доктор Ланка,

спасибо за ваше письмо и интерес к оспе. Демонстрация электронной микроскопии вирионов ортопоксвируса в клинических образцах больных оспой и использование электронной микроскопии для диагностики оспы можно найти в следующих источниках: 1. THE USE OF THE ELECTRON MICROSCOPE IN DIAGNOSIS OF VARIOLA, VACCINIA, AND VARICELLA. NAGLER AND GEOFFREY RAKE 1947

(<https://journals.asm.org/doi/pdf/10.1128/jb.55.1.45-51.1948>)

2. Smallpox diagnosis with special reference to electron microscopy. C. E. Van Rooyen et al. 1948

(https://www.jstor.org/stable/41979862?searchText=Smallpox%20diagnosis%20with%20special%20reference%20to%20electron%20microscopy%20C%20E%20VAN%20ROOYEN&searchUri=%2Faction%2FdoBasicSearch%3FQuery%3DSmallpox%2Bdiagnosis%2Bwith%2Bspecial%2Breference%2Bto%2Belectron%2Bmicroscopy%2BC%2BE%2BVAN%2BROOYEN%26so%3Drel&ab_segments=0%2FSYC-6451%2Ftest&refreqid=fastly-default%3A403da56cbf44a049181ef7ad672de0b2)

В этих публикациях мы видим изображения неких белых точек.

THE USE OF THE ELECTRON MICROSCOPE IN DIAGNOSIS OF VARIOLA, VACCINIA, AND VARICELLA.

NAGLER
AND GEOFFREY RAKE 1947.

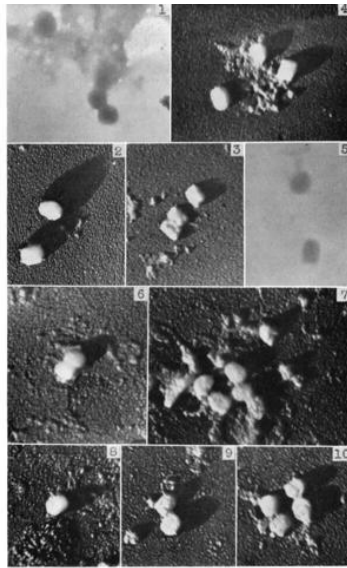


FIG. 1-4. VARIOLA VIRUS FROM HUMAN CASE OF SMALLPOX
 1. Magnification $\times 24,800$.
 2-4. Shadowed with 22.1 mg gold at the angle tangent $2/11.52$. $\times 24,800$.
 FIG. 5-7. VACCINIA VIRUS FROM HUMAN CASE WITH SECONDARY VACCINIA
 5. Magnification $\times 24,800$.
 6-7. Shadowed with 24.5 mg of gold at the angle tangent $2/10.8$. $\times 24,800$.
 FIG. 8. VACCINIA VIRUS FROM CALF INFECTED WITH VACCINIA
 Shadowed with 24.5 mg of gold at the angle tangent $2/10.8$. $\times 24,800$.
 FIG. 9-10. VACCINIA VIRUS FROM GLYCERINATED SMALLPOX VACCINE
 Shadowed with 22.4 mg of gold at the angle tangent $2/9.79$. $\times 24,800$.



FIGURE 6
 Variola elementary bodies from case of smallpox. In: *Proceedings of the National Academy of Sciences*, 1948, 34: 100-101. Specimens as in no. 5 collected and mounted prepared under field conditions. The morphology of the virus bodies is clearly recognizable. $\times 25,000$.

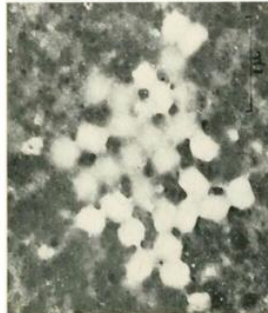


FIGURE 5
 Micrograph from recent specimen of smallpox body conditions from case of smallpox in Tegalana. Nucleolus effect of 200mg due to great contrast. Elementary bodies are still recognizable as to size and shape, sufficient to establish a diagnosis. $\times 25,000$.

Smallpox diagnosis with special reference to electron microscopy.

C. E. Van Rooyen
et al. 1948



Figure 2
As in no. 1, after dechlorination. The large central area of greater electron density, with similar surrounding areas. x 25,000.



Figure 1
Vertical elementary bodies from the laboratory from infected rabbit skin, subcutaneous, showing rectangular outlines. x 25,000.

Smallpox diagnosis with special reference to electron microscopy. C. E. Van Rooyen et al. 1948



Figure 4
As in no. 3, but magnified. x 17,000.

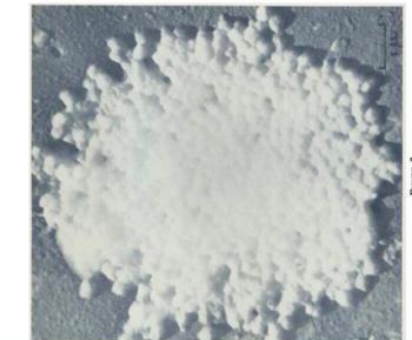


Figure 3
Vertical elementary bodies from the laboratory from infected rabbit skin, subcutaneous, showing the large mass of bodies suggestive of a complete Cowdrii inclusion body, shallow cast. x 14,000.

Smallpox diagnosis with special reference to electron microscopy. C. E. Van Rooyen et al. 1948

Авторы утверждают, что это вирионы вируса натуральной оспы, однако, они не предоставили никакого биохимического анализа, чтобы показать, что они действительно являются вирусом. Поэтому абсолютно неясно, что они на самом деле сфотографировали. Вот какой низкий уровень доказательства содержался в публикациях, на который сослалась ВОЗ в своем ответе.