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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 14926.60-2001

**Laboratory animals - Method for the examination of
cercopithecine herpesvirus 1 (B virus)**

实验动物 猕猴疱疹病毒 I 型 (B病毒) 检测方法

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1 Scope

This standard specifies the methods and the reagents for the examination of cercopithecine herpesvirus 1, known as B virus, in laboratory animals.

It applies to the examination of monkeys for B virus, on entry into a facility, in the routine health monitoring of a colony, and in the investigation of a suspected exposure.

2 Normative references

The following documents contain provisions which, through reference in this text, constitute provisions of this standard.

GB/T 14926.50 Laboratory animals - Serological methods · GB/T 14926.51 Laboratory animals - Methods for the examination of viral antigens

As elsewhere in the GB/T 14926 series, the immunological techniques are specified once for the whole series and this part states which of them apply to this agent, on what specimens, and how a result is interpreted.

3 The examination

The examination is serological in the first instance: antibody in the serum of the animal, detected by the methods of GB/T 14926.50, establishes that the animal has been infected.

For B virus the serological result carries more weight than it would for most agents, because a positive animal is presumed to remain infected for life. Herpesviruses establish latency in the sensory ganglia, and an animal that has seroconverted is a lifelong carrier

whether or not it ever shows a lesion.

Detection of viral antigen and identification of the virus from lesion material are used where the animal is showing signs, and are the routes that establish active shedding. Shedding is intermittent, which is the practical difficulty of the whole subject: a negative swab from an animal with antibody means the animal is not shedding today.

Harmless in its host, and not at all in ours

B virus is the macaque equivalent of human herpes simplex, and in a macaque it behaves like it: an occasional cold sore in the mouth, latency, recurrence under stress, and a carriage rate approaching the whole adult population of a colony.

In a human being it does something entirely different. It travels the peripheral nerves to the central nervous system and produces an encephalomyelitis whose untreated fatality rate is around eighty per cent, and the survivors are usually left with permanent neurological damage.

The route is a bite, a scratch, or the splash of a body fluid onto a mucous membrane or broken skin, which are the ordinary hazards of handling monkeys. That is what makes this examination an occupational health instrument as much as a veterinary one: what it protects is not the colony, which lives with the virus, but the people working in the room.

Harmless in its own host

In the macaque it behaves much as herpes simplex does in humans: mild or inapparent, latent for life in the sensory ganglia, shed intermittently in saliva, conjunctival fluid and urine.

So an animal that looks entirely healthy can be infectious.

And not at all in ours

A bite, a scratch, a needlestick or a splash to a mucous membrane can transmit it, and the resulting encephalomyelitis is fatal in most untreated cases.

Most of those who survive are left with severe neurological damage.

Which makes this occupational health

Every colony of macaques used in research is monitored for it, and the monitoring protects the staff as much as the animals.

What the method fixes

The sampling - which animals, how many, at what interval - the specimens taken, the

serological detection of antibody as the screening test, the confirmation of positives and the interpretation.

And the biosafety requirements for handling the samples, which are as hazardous as the animals they came from.

Why a two-page standard needs biosafety provisions

The procedure itself is short and unremarkable: take blood, run the serological methods of GB/T 14926.50, read the result. What makes this document different from the other parts of the series is that collecting the specimen is the dangerous step.

Restraining a macaque to draw blood is precisely the activity that produces bites and scratches, and a seropositive animal that happens to be shedding at that moment is infectious through exactly that route. The examination that identifies the hazard is carried out in contact with it.

This is why the handling requirements travel with the method rather than being left to the facility. Chemical restraint rather than manual where possible, protection for the face and the eyes against splashes, and a written procedure for what happens in the minutes after an exposure - because for B virus the treatment window is measured in hours and the decision cannot be made by someone reading up on it afterwards.

What a colony does with a positive result

A herpesvirus that establishes lifelong latency cannot be cleared from an animal, so a positive result is not a treatable finding. What it changes is how the animal is handled and where it can go.

Specific pathogen free colonies are built by starting from seronegative animals and keeping them from ever meeting a positive one, which in practice means separate housing, separate staff and separate equipment. Once that separation exists, the examination becomes the instrument that maintains it: an animal is tested before it enters, and periodically after.

For a conventional colony where the virus is endemic, the same test result means something different. It does not exclude the animal; it tells the people working with it which precautions are not optional, and it is used to decide who may handle the animal rather than whether the animal stays.