Laboratory Preparedness and Response Branch
Biological Response Section

Specimen Requirements for Real-Time Polymerase Chain Reaction (PCR) Assay for the Detection of *Varicella Zoster* Virus (VZV) DNA in Clinical Samples

Methodology:	*Varicella-zoster* virus Real-Time PCR
Performed:	The real-time PCR assay is a CDC-developed test for the qualitative presumptive detection of *varicella-zoster* virus DNA in clinical specimens. FRET PCR Assays and VZV genotyping to confirm a vaccine-adverse event are performed at the CDC.
Criteria for testing:	Clinical signs and symptoms compatible with *varicella-zoster* virus infection.
Turn-Around-Time:	Only specimens meeting the case definition set by the Disease Investigation Branch (DIB) of the Disease Outbreak Control Division (DOCD) of the Department of Health will be tested. Testing will commence after approval is received from the DIB and receipt of appropriate specimen(s).
Specimen type required:	The following specimens may be submitted for VZV PCR: 1. Swab of the vesicular lesion - Sanitize skin with alcohol wipe and allow to completely dry. Unroof the top of the vesicle with a sterile scalpel or a sterile 26-gauge needle. Use a sterile swab (see below) to vigorously swab the base of the lesion – applying enough pressure to collect epithelial cells without causing bleeding - and collect vesicular fluid. Swabs must be placed individually into separate, empty tubes to avoid contamination. Place swabs directly into tubes. **Do not place transport medium into the tube; the specimen MUST be kept dry.** Tubes must be individually labeled and must be resistant to breakage. 2. Slide (touch prep) from the lesions - Unroof the top of the vesicle with a sterile scalpel or a sterile 26-gauge needle. Touch a microscopic slide multiple times to the open lesion. Collect at least 2 slides. Allow slides to air dry for approximately 10 minutes. Labeled slides must be placed individually into separate, empty 50-ml. tubes to avoid contamination. **Do not add transport medium; the specimen MUST be kept dry.** Tubes

containing the slides must be individually labeled and must be resistant to breakage.

3. Vesicle "roof" or crusts (scabs) - Open and remove the top of the lesion with a sterile scalpel or a sterile 26-gauge needle. Transfer specimen directly into a dry, sterile, break-resistant snap-cap or screw-top tubes. **NO VTM.**

For other specimen types not listed, please contact the DIB or the State Laboratories Division (SLD), Laboratory Preparedness and Response Branch for guidance.

Specimen storage and transport:

Use only swabs made from synthetic fibers, such as polyester or Dacron® tip swabs with a plastic shaft or flocked synthetic swabs. Calcium alginate swabs with metal shaft or cotton swabs with wooden sticks are unacceptable because they may cause PCR inhibition.

Swab and crust (scab) specimens must be kept dry (**Do not suspend specimens in transport medium)** and shipped at ambient temperature. Do not refrigerate or freeze dry specimens intended for testing by PCR.

Follow packing and shipping instructions of the U.S. Department of Transportation (U.S. DOT), and the International Air Transport Association (IATA) for Biological Substance, Category B.

For further instructions on specimen collection and handling, refer to http://www.cdc.gov/chickenpox/lab-testing/collecting-specimens.html

Specimen submission:

Submitters: Clinical Laboratories and Epidemiology Specialists of the DIB.
Notification of DIB and the laboratory is requested prior to the submission of specimens.

Criteria for rejection:

- Specimen was not properly collected, or special handling instructions were not followed.
- Use of improper swab(s).
- Unlabeled or incomplete specimen labeling and documentation; Submitter will be notified to provide correct information and corrected SLD Form 81.3.
- Specimen label does not match the requisition.

Requisition Form:	Each specimen submitted must have a completed SLD Form 81.3. Submitter is responsible for completing SLD Form 81.3 including but not limited to the following information: at least two patient unique identifiers, date of onset of illness, signs and symptoms, travel history, immunization history, test (s) requested, name and address of submitter. Requisition form(s) shall be placed in a separate bag or the outside pocket of the specimen bag. It shall not be placed with the specimen(s).
Normal Value:	No *Varicella zoster* virus Nucleic Acid Detected
Result Notification:	Laboratory results are reported to the submitters by electronic reporting system or via fax. Laboratory reports for the DIB of the DOH DOCD will be posted to the DOCD SharePoint.
Test performed at:	Biological Response Section (BRS) Laboratory Preparedness and Response Branch (LPRB) State Laboratories Division Department of Health 2725 Waimano Home Road Pearl City, Hawaii 96782
Contact:	Remedios Gose at (808) 453-5993 or (808) 554-9992 or Cheryl Daquip at (808) 453-5984 or (808) 453-6641

Reviewed By:

Remedios B. Gose — 12/4/19

Remedios B. Gose, MSPH, RM (NRCM) — Date
Laboratory Preparedness and Response Branch Chief

Approved By:

Edward P. Desmond — 12/4/2019

Edward Desmond, Ph.D. — Date
Administrator, State Laboratories Division