Utah Public Health Laboratory

4431 S. 2700 W.
Taylorsville, Utah 84129
Phone: 801-965-2400
Fax: 801-965-2551
Webpage: http://health.utah.gov/lab
GENERAL INSTRUCTIONS

CONTACT US:
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4431 S. 2700 W.
Taylorsville, Utah 84129
Phone: 801-965-2400
Fax: 801-965-2551
Webpage: http://health.utah.gov/lab

KEY PERSONNEL
Administrative
   Robyn Atkinson-Dunn, Ph.D – Laboratory Director
   Brent Curtis – Assistant Laboratory Director
Infectious Disease
   J. Chad Campbell, M(ASCP) – Program Manager: Bacteriology, Food Bacteriology, Mycobacteriology
   Jana Coombs, RM(NRCM), SV, M(ASCP) – Program Manager: Molecular Laboratory, Bioterrorism and Emerging Infectious Diseases
   Kirk W. Benge, MPH – Program Manager: Virology and Immunology
Technical Services
   Colleen Robley – Program Manager: Specimen Processing
   Kyle Spackman – Program Manager: Technical Services

REPORTING:
We request your help in supplying your correct customer ID code. Without this code, your test reports may be delayed or we may not know where to correctly send your results.

REQUISITIONS:
Infectious Disease Test Request Form
Rabies Request Form
COSC Specimen Submittal Form

All information should be provided. Incomplete requisition forms may delay processing. In some cases our laboratory may not be able to process a sample without the requested information.

SPECIMEN LABELING: See individual requirements under specific test.
***Note: Specimen containers from the State of Utah Public Health Lab have an “outdate” printed on the label. Do not collect any sample in an outdated container. Call Technical Services at 801-965-2533 for a new container. We do not supply blood collection tubes.
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Clostridium botulinum
Coxiella burnetii
Francisella tularensis
Variola virus
Yersinia pestis
Appendix B: Test List (alphabetical by organism)
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Bacteriology (Food Testing)

*Bacterial Pathogens in Food*

**TEST**
Bacteria in foods that may be pathogenic for humans (outbreaks only)

**METHOD**
Culture

**AVAILABLE**
Scheduled through UDOH: (801) 801-965-2400

**PATIENT PREP**
N/A

**SPECIMEN**
Sample of suspect foods (call Bacteriology section (801) 965-2598 for details)

**COLLECT IN**
Clean, dry container

**PROCESSING**
Keep food at 2 to 8 degrees C, unless frozen (if frozen then keep it frozen)

**TRANSPORT**
Transport at refrigerator or freezer temperature as appropriate

**TIME CRITICAL**
Transport immediately

**LABEL**
Client name, type of food, date collected, and bacteria suspected

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
Variable, depends on organism

**RESULTS**
Presence or absence

**REPORTED**
Mail, e-mail, or fax, as established with provider

**NOTE**
Food of the same batch or lot number as the suspect item must be submitted

**CONTACT**
Bacteriology Section (801) 965-2400
Bacteriology
Organism Identification and Serotyping

**TEST**
Aeromonas, Pleisiomonas, Vibrio
E. coli (shiga-toxin producing strains only)
Haemophilus influenza
Legionella pneumophila
Plesiomonas
Salmonella species
Shigella species
Vibrio
Yersinia

**METHOD**
Culture isolations and Serotyping (bacterial or latex agglutination, all organisms are confirmed before being typed)

**AVAILABLE**
All clients

**PATIENT PREP**
N/A

**SPECIMEN**
Pure isolate of the organism

**COLLECT IN**
Nutrient media slant or plate that supports organism growth

**PROCESSING**
Fresh subculture

**TRANSPORT**
Room temperature

**TIME CRITICAL**
Organism must be received in our lab within 24 hours of subculture

**LABEL**
Patient’s full name or unique ID number, and date of subculture

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
Variable (depends on organism)

**RESULTS**
Organism and serotype

**REPORTED**
Mail, e-mail, or fax, as established with provider

**NOTE**
Requisition must include submitting laboratory’s presumptive identification of the organism to be typed.

**CONTACT**
Bacteriology Section (801) 965-2400
**Bacteriology**

*Escherichia coli* (EHEC)

**TEST**

*E. coli* shiga-toxin producing strain isolation

**METHOD**

Culture isolations, EIA, bacterial agglutination

**AVAILABLE**

Laboratories providing stool culture

**PATIENT PREP**

See provider protocol

**SPECIMEN**

MaConkey Broth or GN Broth, 24 hour growth and found to be positive for shiga toxin by EIA EHEC test

**TRANSPORT**

After 24 hour incubation at 37°C, refrigerate until shipped on ice.

**TIME CRITICAL**

Should be received in our lab within 24 hours of subculture

**LABEL**

Patient’s full name or unique ID number, and date of collection or subculture

**REQUISITION**

*Infectious Disease Test Request Form*

**TEST COMPLETE**

Negatives = 72 hours; positives = variable depending on confirmation testing

**RESULTS**

Shiga toxin producing strains of *E. coli* are O and h antigen typed, the format of the report is *Escherichia coli* O57-h7.

**REPORTED**

Mail, e-mail, or fax, as established with provider

**NOTE**

Some toxin producing isolates are referred to CDC for typing.

**CONTACT**

Bacteriology Section (801) 965-2400
Bacteriology
*Neisseria gonorrhoeae, Neisseria meningitidis*

**TEST**  
*N. gonorrhoeae; N. meningitidis*

**METHOD**  
Culture confirmation

**AVAILABLE**  
All clients

**PATIENT PREP**  
N/A

**SPECIMEN**  
Pure culture of the organism

**COLLECT IN**  
Appropriate media slant or plate (MTM, chocolate agar)

**PROCESSING**  
Fresh subculture

**TRANSPORT**  
Best in CO₂ pack at 32-35 degrees C

**TIME CRITICAL**  
To be viable outside of a 35 degree CO₂ pack, must be received in the lab within four hours of being removed from the incubator.

**LABEL**  
Patient’s full name or unique ID number, and date of subculture

**REQUISITION**  
*Infectious Disease Test Request Form*

**TEST COMPLETE**  
Three days from receipt in our lab

**RESULTS**  
Presence or absence

**REPORTED**  
Mail, e-mail, or fax, as established with provider

**NOTE**  
*Neisseria meningitidis* will be serotyped. *Neisseria gonorrhoeae* is identified by NAAT.

**CONTACT**  
Bacteriology Section (801) 965-2400
# Bacteriology

*Stool for Bacterial Pathogens*

| TEST | Stool for bacterial pathogens (*Salmonella*, *Shigella*, and *Campylobacter*). Other pathogens may be tested upon request. |
| METHOD | Routine culture |
| AVAILABLE | All clients |
| PATIENT PREP | If a patient has had a barium gastro/enteric procedure, wait at least 72 hours before collecting a specimen |
| SPECIMEN | Feces (stool), rectal swab |
| COLLECT IN | Cary Blair Medium containers available from Technical Services |
| PROCESSING | Do not fill beyond red line (“Add specimen to this line”). Mix well with pink medium (instruction sheet enclosed with collection kit). **Do not use the collection device past the expiration date printed on the label (i.e., EXP: 11/10).** |
| TRANSPORT | Best at 2 to 8 degrees C |
| TIME CRITICAL | Sample should be received in our lab within 24 hours of collection |
| LABEL | Patient’s full name or unique ID number, and collection date (space provided on the container label) |
| REQUISITION | [Infectious Disease Test Request Form](#) |
| TEST COMPLETE | Usually within 4 days of receipt |
| RESULTS | Pathogen isolated (positive) or “No Pathogens [detailed] recovered” (negative) |
| REPORTED | Mail, e-mail, or fax, as established with provider |
| NOTE | *Salmonella* and *Shigella* isolates will be serotyped. |
| CONTACT | Bacteriology Section (801) 965-2400 |
Bioterrorism Response

*Bacillus anthracis* (Anthrax)

**TEST**

*Bacillus anthracis* (Anthrax)

**METHOD**

LRN Procedures

**AVAILABLE**

All clients – Contact Utah Public Health Laboratory prior to submitting specimens.

**PATIENT PREP**

N/A

**SPECIMEN**

Culture isolate, cutaneous lesions, stool, rectal swab, blood cultures, whole blood, sputum, CSF, tissue, nasal swab and environmental samples.

**COLLECT IN**

See *Bacillus anthracis* in Appendix A

**PROCESSING**

See *Bacillus anthracis* in Appendix A

**TRANSPORT**

See *Bacillus anthracis* in Appendix A. Ship suspect isolates as Suspected Category A Infectious Substance.

**TIME CRITICAL**

Should be received in our laboratory as soon as possible

**LABEL**

Patient’s full name or unique ID number, and date of collection or subculture

**REQUISITION**

*Infectious Disease Test Request Form*

**TEST COMPLETE**

<1 to 3 days

**RESULTS**

Recovered or not recovered; detected or not detected

**REPORTED**

Phone, fax, or e-mail, as established with provider

**NOTE**

It is mandatory that UPHL be contacted prior to submitting samples for testing.

**CONTACT**

(801) 965-2561: Jana Coombs or Kim Christensen
# Bioterrorism Response

**Brucella species (Brucellosis)**

<table>
<thead>
<tr>
<th>TEST</th>
<th>Brucella species (Brucellosis) Brucella Serology</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>LRN Procedures</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients – Contact Utah Public Health Laboratory prior to submitting specimens.</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Organism isolate, environmental samples, blood, serum, spleen, liver or abscess</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>See <em>Brucella species</em> in Appendix A</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>See <em>Brucella species</em> in Appendix A</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>See <em>Brucella species</em> in Appendix A. Ship suspect isolates as Suspected Category A Infectious Substance.</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Should be received in our laboratory as soon as possible</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number, and date of collection or subculture</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><em>Infectious Disease Test Request Form</em></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>Brucella species: &lt;1 to 7 days Brucella Serology: 1day</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Brucella species: Recovered or not recovered; detected or not detected Brucella Serology: <em>Serum titer</em></td>
</tr>
<tr>
<td>REPORTED</td>
<td>Phone, fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>It is mandatory that UPHL be contacted prior to submitting samples for testing.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Kim Christensen</td>
</tr>
</tbody>
</table>
Bioterrorism Response
_Burkholderia mallei_ and _Burkholderia pseudomallei_

**TEST**
_Burkholderia mallei_ (Glanders) and _Burkholderia pseudomallei_ (Melioidosis)

**METHOD**
LRN Procedures

**AVAILABLE**
All clients – Contact Utah Public Health Laboratory prior to submitting specimens.

**PATIENT PREP**
N/A

**SPECIMEN**
Organism isolate, blood, serum, urine, abscesses, tissue aspirates, body fluids (throat, nasal, skin or sputum for intentional release exposures)

**COLLECT IN**
See _Burkholderia mallei_ and _Burkholderia pseudomallei_ in Appendix A

**PROCESSING**
See _Burkholderia mallei_ and _Burkholderia pseudomallei_ in Appendix A

**TRANSPORT**
See _Burkholderia mallei_ and _Burkholderia pseudomallei_ in Appendix A. Ship suspect isolates as Suspected Category A Infectious Substance.

**TIME CRITICAL**
Should be received in our laboratory as soon as possible

**LABEL**
Patient’s full name or unique ID number and date of collection or subculture

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
<1 to 5 days

**RESULTS**
Recovered or not recovered; detected or not detected

**REPORTED**
Phone, fax, or e-mail, as established with provider

**NOTE**
It is mandatory that UPHL be contacted prior to submitting samples for testing.

**CONTACT**
(801) 965-2561: Jana Coombs or Kim Christensen
Bioterrorism Response

*Clostridium botulinum*

**TEST**  
*Clostridium botulinum* culture and toxin (Botulism)

**METHOD**  
LRN Procedures

**AVAILABLE**  
All Clients – Contact Utah Public Health Laboratory prior to submitting specimens.

**PATIENT PREP**  
N/A

**SPECIMEN**  
Stool, enema fluid, gastric aspirate, vomitus, serum, tissue, wound, exudates, organism isolate, postmortem specimens, food and environmental samples

**COLLECT IN**  
See *Clostridium botulinum* in Appendix A

**PROCESSING**  
See *Clostridium botulinum* in Appendix A

**TRANSPORT**  
See *Clostridium botulinum* in Appendix A. Ship suspect isolates as Suspected Category A Infectious Substance.

**TIME CRITICAL**  
Should be received in our laboratory as soon as possible

**LABEL**  
Patient’s full name or unique ID number, and date of collection or subculture

**REQUISITION**  
*Infectious Disease Test Request Form*

**TEST COMPLETE**  
48 to 96 hours

**RESULTS**  
Recovered or not recovered

**REPORTED**  
Phone, fax, or e-mail, as established with provider

**NOTE**  
It is mandatory that UDOH Epidemiology be contacted prior to submitting samples for testing.

**CONTACT**  
(801) 965-2561: Jana Coombs or Kim Christensen
### Bioterrorism Response

*Coxiella burnetii* (Q-fever)

<table>
<thead>
<tr>
<th>TEST</th>
<th><em>Coxiella burnetii</em> (Q-fever)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>LRN Procedures</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients – Contact Utah Public Health Laboratory prior to submitting specimens.</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Environmental samples, blood, serum, nasopharyngeal swab, bronchial/tracheal washing or lesion exudate</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>See <em>Coxiella burnetii</em> in Appendix A</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>See <em>Coxiella burnetii</em> in Appendix A</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>See <em>Coxiella burnetii</em> in Appendix A</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Should be received in our laboratory as soon as possible</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number, and date of collection or subculture</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><em>Infectious Disease Test Request Form</em></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>1 day</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Detected or not detected</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Phone, fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>It is mandatory that UPHL be contacted prior to submitting samples for testing.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Kim Christensen</td>
</tr>
</tbody>
</table>
**Bioterrorism Response**
Environmental Sample Multi-Agent Screen

<table>
<thead>
<tr>
<th>TEST</th>
<th>Environmental Sample Multi-Agent Screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>LRN Procedures</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients – Contact Utah Public Health Laboratory prior to submitting specimens</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Environmental samples; MUST be pre-screened for Explosives, Radiologicals, Flammables, Corrosives, and VOCs.</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Original container or sterile, non-glass container</td>
</tr>
<tr>
<td>DO NOT send:</td>
<td>glass containers, calcium alginate or cotton swabs, swabs with wooden shaft or dry swabs</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>MUST be pre-screened for Explosives, Radiologicals, Flammables, Corrosives, and VOCs. Chain of custody should accompany samples.</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Room temperature. Package and transport according to safe handling, packaging and shipping guidelines.</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Should be received in our laboratory as soon as possible</td>
</tr>
<tr>
<td>LABEL</td>
<td>Unique ID number/Case ID number, date of collection</td>
</tr>
<tr>
<td>REQUISITION</td>
<td>BT Environmental Specimen Form</td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>1 day</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Detected/Not detected; Recovered/Not recovered</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Phone, fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>It is mandatory that UPHL be contacted prior to submitting samples for testing.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Kim Christensen</td>
</tr>
</tbody>
</table>
Bioterrorism Response
Francisella tularensis (Tularemia)

TEST  
Francisella tularensis (Tularemia)

Francisella tularensis Serology

METHOD  
LRN Procedures

AVAILABLE  
All clients – Contact Utah Public Health Laboratory prior to submitting specimens.

PATIENT PREP  
N/A

SPECIMEN  
Organism isolate, environmental samples, blood cultures, biopsied tissue, ulcer or lesion scraping or aspirate, lesion swabs, sputum, bronchial/tracheal wash, serum for serological diagnosis

COLLECT IN  
See Francisella tularensis in Appendix A

PROCESSING  
See Francisella tularensis in Appendix A

TRANSPORT  
See Francisella tularensis in Appendix A. Ship suspect isolates as Suspected Category A Infectious Substance.

TIME CRITICAL  
Should be received in our laboratory as soon as possible

LABEL  
Patient’s full name or unique ID number, and date of collection or subculture

REQUISITION  
Infectious Disease Test Request Form

TEST COMPLETE  
Francisella tularensis: <1 to 7 days, depending on when the specimen was submitted

Francisella tularensis Serology: 1 day

RESULTS  
Francisella tularensis: Recovered or not recovered; detected or not detected

Francisella tularensis Serology: Serum titer

REPORTED  
Phone, fax, or e-mail, as established with provider

NOTE  
It is mandatory that UPHL be contacted prior to submitting samples for testing.

CONTACT  
(801) 965-2561: Jana Coombs or Kim Christensen
# Bioterrorism Response

**Middle Eastern Respiratory Virus Syndrome Coronavirus (MERS-CoV)**

<table>
<thead>
<tr>
<th>TEST</th>
<th>Middle Eastern Respiratory Virus Syndrome Coronavirus (MERS-CoV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>LRN Procedures</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Nasopharyngeal or Oropharyngeal swabs, sputum, lower respiratory tract aspirates/washes, serum</td>
</tr>
<tr>
<td></td>
<td><strong>DO NOT send</strong> calcium alginate or cotton swabs, swabs with wooden shafts or dry swabs.</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Swabs must be placed in Viral Transport Media. Sputum, lower respiratory tract aspirates/washes and serum may be placed in a sterile collection container.</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>A minimum specimen volume of 500µL is required for testing.</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Keep at 2-8°C for up to 48 hours of collection. If delay is expected, store specimens at -70°C. Samples should be received at UPHL within 48 hours of collection. If this is not possible, specimens may be frozen at -70°C and transported on dry ice.</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Should be received in our laboratory as soon as possible, specifically within 48 hours of collection.</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number, and date of collection or subculture</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><a href="#">Infectious Disease Test Request Form</a></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>1 day</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Detected, not detected, equivocal</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Phone, fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>It is mandatory that UDOH Epidemiology be contacted prior to submitting samples for testing.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Kim Christensen</td>
</tr>
</tbody>
</table>
## Bioterrorism Response
### Orthopox viruses

<table>
<thead>
<tr>
<th>TEST</th>
<th>Orthopox viruses</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>LRN Procedures</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Lesion Material (Skin or crust from roof of vesicle or pustule, slide (touch prep), EM grid or swab from vesicular or pustular fluid, punch biopsy). Ocular impressions or swabs (if conjunctivitis is present). Serum (serum alone should never be used to diagnose an orthopox infection if rash is still present).</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>See Variola virus in Appendix A</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>See Variola virus in Appendix A</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>See Variola virus in Appendix A</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Should be received in our laboratory as soon as possible</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number, and date of collection or subculture</td>
</tr>
<tr>
<td>REQUISITION</td>
<td>Infectious Disease Test Request Form</td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>1 day</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Detected or not detected</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Phone, fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>Refer to the Smallpox Specimen Information link on the Microbiology website (<a href="http://health.utah.gov/lab/microbiology/smallpox.pdf">http://health.utah.gov/lab/microbiology/smallpox.pdf</a>) It is mandatory that UPHL or UDOH Epidemiology be contacted prior to submitting samples for testing.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Kim Christensen</td>
</tr>
</tbody>
</table>
Bioterrorism Response

*Ricin toxin*

<table>
<thead>
<tr>
<th>TEST</th>
<th>Ricin toxin</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>LRN Procedures</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>Ordered by Epidemiology, Local Health, Local Law, or FBI</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Environmental samples</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Original container or sterile, non-glass container</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>Use universal precautions – all manipulations under a Biosafety Cabinet</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Refer to Safe Handling, Packaging, and Shipping Guidelines</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Should be received in our laboratory as soon as possible</td>
</tr>
<tr>
<td>LABEL</td>
<td>Identification, sample description, date of collection</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><a href="#">Infectious Disease Test Request Form</a></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>1 day</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Reactive or not reactive</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Phone, fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>It is mandatory that UPHL be contacted prior to submitting samples for testing.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Kim Christensen</td>
</tr>
</tbody>
</table>
Bioterrorism Response
Variola virus (Smallpox)- Referral Test

TEST          Variola virus (Smallpox)

METHOD        Testing location/method will be decided after consultation with CDC

AVAILABLE     All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191

PATIENT PREP  N/A

SPECIMEN      Microscope slide touch preps, scabs, dried vesicular fluid, vesicular swabs, vesicular tissue

COLLECT IN    See Variola virus in Appendix A

PROCESSING    See Variola virus in Appendix A

TRANSPORT     See Variola virus in Appendix A. Ship all samples as Suspected Category A Infectious Substance.

TIME CRITICAL Should be received in our laboratory as soon as possible

LABEL         Patient’s full name or unique ID number, and date of collection

REQUISITION   Infectious Disease Test Request Form

TEST COMPLETE Call for details

RESULTS       Detected or not detected

REPORTED      Phone, fax, or e-mail, as established with provider

NOTE          Refer to the Smallpox Specimen Information link on the Microbiology website http://health.utah.gov/lab/microbiology/smallpox.pdf

               It is mandatory that UPHL or UDOH Epidemiology be contacted prior to submitting samples for testing.

CONTACT       (801) 965-2561: Jana Coombs or Kim Christensen
Bioterrorism Response

*Yersinia pestis (Plague)*

**TEST**  
*Yersinia pestis* (Plague)  
*Yersinia pestis* Serology

**METHOD**  
LRN Procedures

**AVAILABLE**  
All clients – Contact Utah Public Health Laboratory prior to submitting specimens.

**PATIENT PREP**  
N/A

**SPECIMEN**  
Isolate of organism, environmental samples, bronchial wash, tracheal aspirate, sputum, nasopharyngeal swabs, lymph node aspirates, serum, lesion exudates, tissue smears, blood

**COLLECT IN**  
See *Yersinia pestis* in Appendix A

**PROCESSING**  
See *Yersinia pestis* in Appendix A

**TRANSPORT**  
See *Yersinia pestis* in Appendix A. Ship suspect isolates as Suspected Category A Infectious Substance.

**TIME CRITICAL**  
Should be received in our laboratory as soon as possible

**LABEL**  
Patient’s full name or unique ID number, and date of collection or subculture

**REQUISITION**  
Infectious Disease Test Request Form

**TEST COMPLETE**  
*Yersinia pestis*: <1 to 7 days  
*Yersinia pestis* Serology: 1 day

**RESULTS**  
*Yersinia pestis*: Recovered or not recovered; detected or not detected  
*Yersinia pestis* Serology: *Serum titer*

**REPORTED**  
Phone, fax, or e-mail, as established with provider

**NOTE**  
It is mandatory that UPHL be contacted prior to submitting samples for testing.

**CONTACT**  
(801) 965-2561: Jana Coombs or Kim Christensen
<table>
<thead>
<tr>
<th><strong>TEST</strong></th>
<th>Hantavirus IgG and IgM (Sin Nombre Virus)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>METHOD</strong></td>
<td>Enzyme-linked Immunosorbent Assay (ELISA)</td>
</tr>
<tr>
<td><strong>AVAILABLE</strong></td>
<td>All clients</td>
</tr>
<tr>
<td><strong>PATIENT PREP</strong></td>
<td>Use aseptic collection technique</td>
</tr>
<tr>
<td><strong>SPECIMEN</strong></td>
<td>Minimum of 1 mL serum</td>
</tr>
<tr>
<td><strong>COLLECT IN</strong></td>
<td>Vacutainer tube (gold, tiger or red top only)</td>
</tr>
<tr>
<td><strong>PROCESSING</strong></td>
<td>Allow blood to completely clot, spin at 3200 rpm for 10 minutes to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. <strong>Do not freeze whole blood.</strong></td>
</tr>
<tr>
<td><strong>TRANSPORT</strong></td>
<td>Room temperature or refrigerated (do not freeze)</td>
</tr>
<tr>
<td><strong>TIME CRITICAL</strong></td>
<td>Specimen must be received in our lab within 7 days of collection</td>
</tr>
<tr>
<td><strong>LABEL</strong></td>
<td>Patient’s full name or unique ID number, and collection date</td>
</tr>
<tr>
<td><strong>REQUISITION</strong></td>
<td><a href="#">Infectious Disease Test Request Form</a></td>
</tr>
<tr>
<td><strong>TEST COMPLETE</strong></td>
<td>Test run within one week (2 weeks maximum) depending on number received</td>
</tr>
<tr>
<td><strong>RESULTS</strong></td>
<td>Negative, indeterminate, or positive</td>
</tr>
<tr>
<td><strong>REPORTED</strong></td>
<td>Mail, e-mail, or fax, as established with provider</td>
</tr>
<tr>
<td><strong>CONTACT</strong></td>
<td>Virology Section (801) 965-2584</td>
</tr>
</tbody>
</table>
Immunology

*Hepatitis B and Hepatitis C viruses*

**TEST**
Hepatitis B surface antigen (HBsAg), Hepatitis B surface antigen Confirmation (HBsAg Conf), Hepatitis B surface antibody (HBsAb) or Hepatitis C viral antibody (HCVAb).

**METHOD**
Chemiluminescent Microparticle Immunoassay (CMIA)

**AVAILABLE**
All clients

**PATIENT PREP**
Use aseptic collection technique

**SPECIMEN**
Minimum of 1 mL serum per test

**COLLECT IN**
Vaccutainer tube (gold, tiger or red top only)

**PROCESSING**
Allow blood to completely clot, spin at 3200 rpm for 10 mins to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. *Do not freeze whole blood.*

**TRANSPORT**
Room temperature or refrigerated

**TIME CRITICAL**
Must be received in our lab within 7 days of collection

**LABEL**
Patient’s full name or unique ID number, and collection date

**REQUISITION**
*Infectious Disease Test Request Form*

**TEST COMPLETE**
Tests run Mondays and Thursdays, reported same day (except positive antigen tests. HBsAg positives require confirmation before reporting)

**RESULTS**
Negative, indeterminate or positive

**REPORTED**
Mail, e-mail, or fax, as established with provider

**NOTE**
Performance has not been established for the use of cadaveric specimens

**CONTACT**
Virology Section (801) 965-2584
**Immunology**  
*Human immunodeficiency virus*

<table>
<thead>
<tr>
<th>TEST</th>
<th>HIV Ag/Ab Combo screening test</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>Chemiluminescent Microparticle Immunoassay (CMIA)</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>Use aseptic blood collection technique</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>2 mL serum <em>(DO NOT</em> send Orasure samples)</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Vacutainer tube (gold, tiger or red top only)</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>Allow blood to completely clot, spin at 3200 rpm for 10 minutes to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. <em>Do not freeze whole blood.</em></td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Room temperature or refrigerated</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Must be received in our lab within 7 days of collection</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number, and collection date</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><a href="#">Infectious Disease Test Request Form</a></td>
</tr>
</tbody>
</table>

**TEST COMPLETE**  
CMIA tests are run Tuesdays and Fridays. Negatives are reported the same day. Positives require Multi-spot confirmation testing that is performed once per week or as volume allows.

**RESULTS**  
Non-reactive, Reactive with Multi-spot confirmation results or
Indeterminate (new specimen should be submitted)

**REPORTED**  
Mail, e-mail, or fax, as established with provider

**NOTE**  
All specimens that are CMIA repeatedly reactive are automatically confirmed by Biorad Multi-spot

**CONTACT**  
Virology Section (801) 965-2584
**Immunology**

*Human immunodeficiency virus*

<table>
<thead>
<tr>
<th>TEST</th>
<th>HIV 1/2 Multi-spot Rapid Test (HIV confirmation test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>Qualitative immunoassay</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients with a positive HIV Ag/Ab Combo (screening) test</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>Use aseptic collection technique</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Minimum of 1 mL serum</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Vacutainer tube (gold, tiger or red top only)</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>Allow blood to completely clot, spin at 3200 rpm for 10 minutes to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. <strong>Do not freeze whole blood.</strong></td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Room temperature, refrigerated, or frozen</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Specimen must be received in our lab within 7 days of collection</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number, and collection date</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><a href="#">Infectious Disease Test Request Form</a></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>Test run within one week (2 weeks maximum) depending on number received</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Negative, Positive, or Indeterminate</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Mail, e-mail, or fax, as established with provider</td>
</tr>
<tr>
<td>CONTACT</td>
<td>Virology Section (801) 965-2584</td>
</tr>
</tbody>
</table>
# Immunology

*Syphilis*

<table>
<thead>
<tr>
<th>TEST</th>
<th>Syphilis IgG</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>ELISA</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>Use aseptic collection technique</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Serum</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Vacutainer tube (gold, tiger or red top only)</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>Allow blood to completely clot, spin at 3200 rpm for 10 mins to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. <strong>Do not freeze whole blood.</strong></td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Room temperature or refrigerated</td>
</tr>
<tr>
<td>TIME CRITICAL</td>
<td>Specimen must be received in our lab within 5 days of collection</td>
</tr>
<tr>
<td>LABEL</td>
<td>Patient’s full name or unique ID number and collection date</td>
</tr>
<tr>
<td>REQUISITION</td>
<td><a href="#">Infectious Disease Test Request Form</a></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>Test run on Tuesdays and Fridays as volume allows</td>
</tr>
<tr>
<td>RESULTS</td>
<td>Negative, Positive, or Indeterminate</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Mail, e-mail, or fax, as established with provider</td>
</tr>
<tr>
<td>NOTES</td>
<td>Specimens with Positive or Indeterminate results will be tested by RPR.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>Virology Section (801) 965-2584</td>
</tr>
</tbody>
</table>
Immunology

Syphilis

TEST
Syphilis Rapid Plasmin Reagin (RPR)

METHOD
Enzyme Immuno-assay (EIA)

AVAILABLE
All clients

PATIENT PREP
Use aseptic collection technique

SPECIMEN
Minimum of 1 mL serum

COLLECT IN
Vacutainer tube (gold, tiger or red top only)

PROCESSING
Allow blood to completely clot, spin at 3200 rpm for 10 minutes to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. Do not freeze whole blood.

TRANSPORT
Room temperature or refrigerated

TIME CRITICAL
Must be received in our lab within 5 days of collection

LABEL
Patient’s full name or unique ID number, and collection date

REQUISITION
Infectious Disease Test Request Form

TEST COMPLETE
Test run on Tuesdays and Thursdays

RESULTS
Negative or Reactive with dilution titer (i.e, reactive 1:4) and accompanying TP-PA result

REPORTED
Mail, e-mail, or fax, as established with provider

NOTE
Avoid sending grossly hemolyzed or lipemic samples
Specimens with discrepant IgG/RPR results will be confirmed by TP-PA. Additional fee will apply.

CONTACT
Virology Section (801) 965-2584
# Immunology

**Syphilis**

**TEST**  
*Treponema pallidum* Particle Agglutination (TP-PA)

**METHOD**  
Qualitative gelatin particle agglutination

**AVAILABLE**  
All clients as part of the Syphilis algorithm (samples with discrepant IgG/RPR results only)

**PATIENT PREP**  
Use aseptic collection technique

**SPECIMEN**  
Minimum of 1 mL serum

**COLLECT IN**  
Vaccutainer tube (gold, tiger or red top only)

**PROCESSING**  
Allow blood to completely clot, spin at 3200 rpm for 10 minutes to remove lipids and bacterial contaminants. You may submit the blood sample as is if you do not have a centrifuge. **Do not freeze whole blood.**

**TRANSPORT**  
Room temperature or refrigerated

**TIME CRITICAL**  
Must be received in our lab within 48 hours of collection

**LABEL**  
Patient’s full name or unique ID number, and collection date

**REQUISITION**  
*Infectious Disease Test Request Form*

**TEST COMPLETE**  
Test performed on Tuesdays and Thursdays

**RESULTS**  
Nonreactive, Reactive, or Indeterminate

**REPORTED**  
Mail, e-mail, or fax, as established with provider

**NOTE**  
For indeterminate test results, it is recommended that the patient be retested in 2 weeks.

**CONTACT**  
Virology Section (801) 965-2584
**Immunology**

*Tuberculosis*

**TEST**  
TB Quantiferon

**METHOD**  
ELISA

**AVAILABLE**  
All clients

**PATIENT PREP**  
Use aseptic collection technique

**SPECIMEN**  
Blood

**COLLECT IN**  
High-altitude tubes made by the manufacturer (Cellestis) and supplied by Unified State Labs. Must draw 1 Nil, 1 Mitogen and 1 Antigen tube per patient

**PROCESSING**  
Fill tubes with blood to the black mark. Shake immediately and vigorously 10 times after filling

**TRANSPORT**  
Send to the laboratory with accompanying paperwork within 14 hours of collection at room temperature

**TIME CRITICAL**  
Specimen must be received in our lab within 14 hours of collection

**LABEL**  
Patient’s full name or unique ID number, collection date and time (write in on lab slip)

**REQUISITION**  
Infectious Disease Test Request Form

**TEST COMPLETE**  
Test run on Wednesdays

**RESULTS**  
Negative, Positive, or Indeterminate

**REPORTED**  
Mail, e-mail, or fax, as established with provider

**NOTE**  
Additional processing, transport, and time-critical options are available upon request for qualified sites. Please contact the Immunology Laboratory for details.

**CONTACT**  
Virology Section (801) 965-2584
Molecular Laboratory

_Bordetella pertussis_ PCR Referral Test

**TEST**

_Bordetella pertussis_ PCR (pertussis, whooping cough) Referral Test

See also _Virus Identification – Respiratory Panel_ which includes _Bordetella pertussis, Chlamydophila pneumonialae, and Mycoplasma pneumonialae_

**METHOD**

Polymerase Chain Reaction (PCR)

**AVAILABLE**

All clients

**PATIENT PREP**

Best if collected following a coughing spasm

**SPECIMEN**

Nasopharyngeal swab, aspirate, or isolate

**COLLECT IN**

Nasopharyngeal Swab: Dacron or polyester swab in Universal/Viral Transport Media. Refrigerated as soon as possible after collection.

Aspirate: sterile, leak-proof container, refrigerated or frozen

Isolate: send in Regan-Lowe Transport Media, refrigerated, or on Cryobeads, frozen

**PROCESSING**

Do not use calcium alginate swabs, swabs with wooden shaft or charcoal based medium.

**TRANSPORT**

Cold packs or dry ice. Refrigerated specimens should be shipped on cold packs.

Frozen specimens should be shipped frozen.

**TIME CRITICAL**

UPHL Send to UPHL as soon as possible after collection

**LABEL**

Patient’s full name or unique ID number, and date of collection

**REQUISITION**

_Infectious Disease Test Request Form_

**TEST COMPLETE**

Specimens are referred to Minnesota Department of Health-Public Health Laboratory for _Bordetella_ species PCR testing

**RESULTS**

_Bordetella_ species Detected or Not Detected

**REPORTED**

Results are mailed, e-mailed or faxed, as established with provider

**NOTE**

Throat and nasal swabs are unacceptable samples

**CONTACT**

(801) 965-2561: Jana Coombs or Annette Atkinson
Molecular Laboratory
Norovirus PCR Referral Testing

TEST Norovirus PCR (Outbreak related) Referral Testing

METHOD Polymerase Chain Reaction (PCR)

AVAILABLE Local and State Health Department clients. Contact Utah Public Health Laboratory prior to submitting specimens.

PATIENT PREP N/A

SPECIMEN Stool – A minimum of 2-4 specimens per outbreak required. Each specimen must be from a unique patient.

COLLECT IN Sterile container or Cary-Blair Transport Medium

PROCESSING A minimum of 0.5mL of stool is required for processing. Keep stool refrigerated at 2-8 degrees C until transport.

TRANSPORT Cold packs.

TIME CRITICAL Should be received at UPHL within 72 hours of collection

LABEL Patient’s full name or unique ID number, and date of collection.

REQUISITION COSC Stool Submittal Form

TEST COMPLETE Specimens are referred to California Public Health Laboratory

RESULTS Norovirus RNA detected or no Norovirus RNA detected

REPORTED Results are mailed, e-mailed or faxed, as established with provider

NOTE Please contact UPHL prior to sending specimens. Minimum of 2-4 specimens per outbreak required

CONTACT (801) 965-2561: Jana Coombs or Annette Atkinson
# Molecular Laboratory

**West Nile Virus (Human) IgM**

<table>
<thead>
<tr>
<th>TEST</th>
<th>West Nile Virus IgM, (Human)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>Microsphere Immunoassay (MIA)</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>All clients. Prior to submitting specimen, contact UDOH Epidemiology at (801)538-6191</td>
</tr>
<tr>
<td>PATIENT PREP</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIMEN</td>
<td>Serum or CSF; a minimum specimen volume of 100µL is required for testing</td>
</tr>
<tr>
<td>COLLECT IN</td>
<td>Sterile container</td>
</tr>
<tr>
<td>PROCESSING</td>
<td>Serum: separate from red blood cells and refrigerate (freeze if transport delayed) CSF: refrigerate</td>
</tr>
<tr>
<td>TRANSPORT</td>
<td>Cold packs or dry ice. Refrigerated specimens should be shipped on cold packs. Frozen specimens should be shipped frozen</td>
</tr>
</tbody>
</table>

**TIME CRITICAL** NA

<table>
<thead>
<tr>
<th>LABEL</th>
<th>Patient’s full name or unique ID number, date of collection, and date of onset of symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQUISITION</td>
<td><strong>Infectious Disease Test Request Form</strong></td>
</tr>
<tr>
<td>TEST COMPLETE</td>
<td>7 days</td>
</tr>
<tr>
<td>RESULTS</td>
<td>WNV IgM antibody detected by MIA; WNV IgM antibody not detected by MIA; Inconclusive</td>
</tr>
<tr>
<td>REPORTED</td>
<td>Fax, or e-mail, as established with provider</td>
</tr>
<tr>
<td>NOTE</td>
<td>If initial serum specimen was collected within 9 days of onset of symptoms, a convalescent serum will be requested for IgM negative or inconclusive tests.</td>
</tr>
<tr>
<td>CONTACT</td>
<td>(801) 965-2561: Jana Coombs or Annette Atkinson</td>
</tr>
</tbody>
</table>
Molecular Laboratory
West Nile Virus, St. Louis Encephalitis Virus, or Western Equine Encephalitis Virus PCR

**TEST**
West Nile Virus, St. Louis Encephalitis Virus, or Western Equine Encephalitis Virus PCR

**METHOD**
Polymerase Chain Reaction (PCR)

**AVAILABLE**
Mosquito Abatement Districts. Contact UDOH Epidemiology at (801)538-6191 or Division or Wildlife Resources at (801) 538-4767 before submitting avian oral swabs and dead bird reports.

**PATIENT PREP**
N/A

**SPECIMEN**
Mosquitos = 10-100 insects, pooled by species

**COLLECT IN**
Mosquitoes = tubes from Mosquito Abatement District.
Swabs = Ziploc bags; outer bag must be clean.

**PROCESSING**
Keep mosquitoes at 2 - 8 degrees C.
Keep avian oral swabs at ambient temperature.

**TRANSPORT**
On cold packs

**TIME CRITICAL**
Within 48 hours of collection

**LABEL**
Location and date of collection. Species of source animal. Number of insects per tube and species.

**REQUISITION**
Mosquito Abatement Worksheet

**TEST COMPLETE**
5 days

**RESULTS**
Virus RNA detected by PCR; Virus RNA not detected by PCR

**REPORTED**
Mail, e-mail, or fax, as established with provider

**CONTACT**
(801) 965-2561: Jana Coombs or Kim Christensen
Mycobacteriology

*Acid-fast Bacillus stain*

**TEST**
Acid-fast bacillus stain (AFB smear)

**METHOD**
Auramine-O (fluorescent), confirmatory = Kinyoun acid-fast stain

**AVAILABLE**
All clients

**PATIENT PREP**
Sputum = collect early morning specimen from deep, productive cough (have patient rinse mouth with water just prior to collection). Sterile body sites, use sterile collection technique. Urine = collect with aseptic culture technique.

**SPECIMEN**
All specimens (except blood) submitted for AFB culture will have a direct AFB stain performed.

**COLLECT IN**
Bronchial washing/lavage, sputum = sterile 50mL screw cap conical tube (available from Tech Services) CSF, body fluids, feces, tissue, urine = sterile container. **Swabs are unacceptable for testing.**

**PROCESSING**
Avoid tap water on any instrument used in a procedure as it may contain AFB. Submit tissue in sterile saline.

**TRANSPORT**
Room temperature 24hrs; Refrigerated 1 week; Frozen 1 week.

**TIME CRITICAL**
Must be received in our lab within 5 days of collection

**LABEL**
Patient’s full name or unique ID number, and collection date

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
80% within 24 hrs of receipt in our lab

**RESULTS**
Negative for acid-fast bacilli, or Positive with quantitative grading using the American Lung Accusation protocol. **AFB culture with smear is recommended. A negative smear result alone does not rule out the presence of AFB.**

**REPORTED**
All positive results are phoned. Reported as a preliminary to AFB culture. Reports are mailed, e-mailed, or faxed, as established with the provider

**NOTE**
All positive fluorescent smears are confirmed with a permanent staining method (Kinyoun)

**CONTACT**
TB section (Bacteriology/Mycobacteriology) (801) 965-2400
Mycobacteriology

*Acid-fast bacilli (AB) culture*

**TEST**
Acid-fast bacilli (AFB) culture

**METHOD**
Rapid, liquid culture; standard media culture

**AVAILABLE**
All clients, a fee is charged for specimens from private laboratories.

**PATIENT PREP**
Sputum = collect early morning specimen from deep, productive cough (have patient rinse mouth with water just prior to collection). Sterile body sites use aseptic collection technique. Urine = collect with aseptic culture technique (clean catch).

**SPECIMEN**
Bronchial washing, lavage = >5 mL, CSF = >5 mL, other body fluids >2 mL.

**COLLECT IN**
Bronchial washing/lavage, sputum = sterile 50mL screw cap conical tube (available from Tech Services) CSF, body fluids, feces, tissue, urine = sterile, leak proof container. Swabs are unacceptable for testing.

**PROCESSING**
Avoid tap water on any instrument used in a procedure as it may contain AFB. Submit tissue in sterile saline.

**TRANSPORT**
Room temperature 24hrs; Refrigerated 1 week; Frozen 1 week. Do not use transport media.

**TIME CRITICAL**
Must be received in our lab within 5 days of collection

**LABEL**
Patient’s full name or unique ID number, and collection date

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
Negative = 7 weeks. Positive depends on organism isolated (preliminary positive reports sent when AFB growth is detected)

**RESULTS**
No AFB isolated (negative), or Genus and species/complex (positive)

**REPORTED**
Mail, e-mail, or fax, as established with the provider

**NOTE**
Susceptibility testing is performed on cultures yielding *M. tuberculosis* complex. Leaking specimens will be rejected

**CONTACT**
TB section (Bacteriology/Mycobacteriology) (801) 965-2400
Mycobacteriology

*MTB/RIF Nucleic Acid Amplification Test*

**TEST**
Cepheid GeneXpert MTB/RIF assay

**METHOD**
MTB/RIF assay performed on processed respiratory specimens.

**AVAILABLE**
Testing is part of the AFB culture on positive respiratory specimens.

**PATIENT PREP**
Sputum = collect early morning specimen from deep, productive cough (have patient rinse mouth with water just prior to collection).

**SPECIMEN**
Bronchial washing, lavage = >5 mL.

**COLLECT IN**
Bronchial washing/lavage, sputum = sterile 50mL screw cap conical tube (available from Tech Services) Swabs are unacceptable for testing.

**PROCESSING**
Avoid tap water on any instrument used in a procedure as it may contain AFB. Submit tissue in sterile saline.

**TRANSPORT**
Room temperature 24hrs; Refrigerated 1 week; Frozen 1 week. Do not use transport media.

**TIME CRITICAL**
Must be received in our lab within 5 days of collection

**LABEL**
Patient’s full name or unique ID number, and collection date

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
Within 48 hours of receipt (working days).

**RESULTS**
*Mycobacterium tuberculosis* complex DNA detected or not detected or test is indeterminate.

**REPORTED**
Reported as a preliminary to AFB culture. Mail, e-mail, or fax, as established with the provider

**NOTE**
Testing is performed on the first respiratory specimen from each patient, additional testing must be pre-approved. Testing will not be performed on patients undergoing treatment for tuberculosis.

**CONTACT**
TB section (Bacteriology/Mycobacteriology) (801) 965-2400
Virology

*Chlamydia trachomatis* and *Neisseria gonorrhoea*

**TEST**  
*Chlamydia trachomatis* and *Neisseria gonorrhoea* NAAT

**METHOD**  
Amplified antigen detection

**AVAILABLE**  
All clients

**PATIENT PREP**  
Clean prep urogenital area as for standard culture collection

Urine = standard clean catch procedure

**SPECIMEN**  
Endocervical, male urethral, rectal, pharyngeal, oral (use unisex swab collection kit)

Urine (use urine specimen collection kit)

Vaginal (use vaginal swab specimen collection kit - clinician or self-collected)

Liquid Pap = specimen transfer kit

**COLLECT IN**  
APTIMA collection kits available from Sample Receiving department. Urine volume must fall between the two black lines on the tube. Samples that do not fall within this range will not be performed

**PROCESSING**  
Keep specimens at 2 to 30 degrees C

**TRANSPORT**  
Transport at 2 to 30 degrees C

**TIME CRITICAL**  
Urine samples must be transferred to the APTIMA urine specimen transport tube within 24 hours of collection. Test must be performed within 30 days of collection

**LABEL**  
Patient’s full name or unique ID number, and collection date. Do not cover the black lines on the urine collection tubes with labels

**REQUISITION**  
*Infectious Disease Test Request Form*

**TEST COMPLETE**  
Tests done Monday thru Friday. Apart from the occurrence of technical difficulties, results will be available after 4 pm on test day

**RESULTS**  
Presumed Negative, Equivocal, or Positive

**REPORTED**  
E-mail, Fax or Mail, as established with provider

**NOTE**  
Both chlamydia and gonorrhea tests are performed from the same specimen

**CONTACT**  
Virology Section (801) 965-2584
Virology

*Human Papillomavirus (HPV)*

**TEST**  
Human papillomavirus NAAT

**METHOD**  
Amplified antigen detection

**AVAILABLE**  
All clients

**PATIENT PREP**  
Follow procedures for collecting gynecological specimen into ThinPrep liquid cytology vials.

**SPECIMEN**  
Cervical (gynecological liquid pap specimen)

**COLLECT IN**  
APTIMA collection kits available from Sample Receiving department. Vortex liquid cytology specimen and transfer 1 ml into APTIMA Specimen Transfer Tube.

**PROCESSING**  
Gynecological specimens in liquid cytology vials may be stored for 30 days at 2-30°C prior to transfer. After transfer into APTIMA kit, keep specimens at 2-30°C

**TRANSPORT**  
Transport at 2 to 30 degrees C

**TIME CRITICAL**  
Transferred specimen must be received in lab within 14 days of collection

**LABEL**  
Patient’s full name or unique ID number, and collection date.

**REQUISITION**  
*Infectious Disease Test Request Form*

**TEST COMPLETE**  
Within 5 business days

**RESULTS**  
Presumed Negative, Positive, or Invalid

**REPORTED**  
E-mail, Fax or Mail, as established with provider

**NOTE**

**CONTACT**  
Virology Section (801) 965-2584
Virology
*Trichomonas vaginalis*

**TEST**
Trichomonas vaginalis NAAT

**METHOD**
Amplified antigen detection

**AVAILABLE**
All clients

**PATIENT PREP**
Follow procedures for collecting gynecological specimen into ThinPrep liquid cytology vials.

**SPECIMEN**
Endocervical swab in unisex swab collection tube
Vaginal swab in vaginal swab collection tube
Cervical (gynecological liquid pap specimen) in specimen transfer tube

**COLLECT IN**
APTIMA collection kits available from Sample Receiving department. Vortex liquid cytology specimen and transfer 1 ml into APTIMA Specimen Transfer Tube.

**PROCESSING**
Gynecological specimens in liquid cytology vials may be stored for 30 days at 2-30°C prior to transfer. After transfer into APTIMA kit and for other specimens types, keep at 2-30°C

**TRANSPORT**
Transport at 2 to 30 degrees C

**TIME CRITICAL**
Swab specimens must be received within 30 days of collection and transferred gynecological specimen must be received in lab within 14 days of collection

**LABEL**
Patient’s full name or unique ID number, and collection date.

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
Within 5 business days

**RESULTS**
Presumed Negative, Positive, or Invalid

**REPORTED**
E-mail, Fax or Mail, as established with provider

**NOTE**

**CONTACT**
Virology Section (801) 965-2584
Virology

*General viral culture*

**TEST**

General viral culture

For detection of viruses other than those detected by molecular methods (including but not limited to enteroviruses and cytomegalovirus)

**METHOD**

Viral culture

**AVAILABLE**

All clients

**PATIENT PREP**

Use aseptic collection technique

**SPECIMEN**

Relevant to symptoms (CSF, feces, skin lesions, throat washings, urine, swabs)

**COLLECT IN**

Sterile, leak proof container or VTM

**PROCESSING**

Keep specimen at 2 to 8 degrees C

**TRANSPORT**

On Cold packs

**TIME CRITICAL**

Must be received in our lab within 72 hours of collection

**LABEL**

Patient’s full name or unique ID number, and collection date

**REQUISITION**

*Infectious Disease Test Request Form*

**TEST COMPLETE**

Two to four weeks

**RESULTS**

Virus isolated or not isolated

**REPORTED**

Mail, e-mail, or fax, as established with provider

**NOTE**

Please specify the virus suspected on the request form

Cultures are not set up on weekends or holidays

**CONTACT**

Virology Section (801) 965-2584
Virology

*Influenza virus PCR*

**TEST**

*Influenza virus PCR*

**METHOD**

Polymerase Chain Reaction (PCR)

**AVAILABLE**

All clients

**PATIENT PREP**

N/A

**SPECIMEN**

Nasopharyngeal swabs, nasal swabs, throat swabs, dual nasopharyngeal/throat swabs, nasal aspirates, nasal washes, bronchoalveolar lavage, bronchial wash, tracheal aspirate, sputum, lung tissue, and virus culture isolates

**COLLECT IN**

Swabs must be placed in Viral Transport media. The following may be placed in a sterile collection container: nasal aspirates, nasal washes, bronchoalveolar lavage, bronchial wash, tracheal aspirate, sputum, and lung tissue.

**PROCESSING**

Keep at 2–8°C for up to 48 hours or at ≤70°C for up to 30 days.

**TRANSPORT**

Transport at 2 – 8 degrees C or if frozen, transport frozen (do not thaw).

**TIME CRITICAL**

Samples must be received at UPHL within 48 hours of collection. If it is not possible to transport specimens within 48 hours of collection, specimens may be frozen at ≤ -70°C and transported on dry ice.

**LABEL**

Patient’s full name or unique ID number, and date of collection

**REQUISITION**

Infectious Disease Test Request Form

**TEST COMPLETE**

1-2 business days

**RESULTS**

Influenza A: Not Detected, Detected (will indicate subtype detected), Inconclusive.

Influenza B: Not Detected, Detected (will indicate genotype detected), Inconclusive.

**REPORTED**

Results are mailed, e-mailed or faxed, as established with provider

**NOTE**

Do not use calcium alginate or cotton swabs, swabs with wooden shaft, or dry swabs

A minimum specimen volume of 500µl is required for testing.

**CONTACT**

Virology section (801) 965-2584
### Virology

*Herpes simplex virus and Varicella zoster virus*

<table>
<thead>
<tr>
<th><strong>TEST</strong></th>
<th>Herpes simplex virus Type 1/Type 2 (HSV-1/HSV-2) and Varicella Zoster (VZV) by PCR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>METHOD</strong></td>
<td>Qualitative Polymerase Chain Reaction</td>
</tr>
<tr>
<td><strong>AVAILABLE</strong></td>
<td>All clients</td>
</tr>
<tr>
<td><strong>PATIENT PREP</strong></td>
<td>Use aseptic collection technique</td>
</tr>
</tbody>
</table>
| **SPECIMEN** | HSV: Buccal mucosa, eye, genital, rectal, throat or vesicle swabs.  
VZV: CSF, body fluid, buccal mucosa, eye, genital, rectal, throat or vesicle swabs, or vesicle fluid. |
<p>| <strong>COLLECT IN</strong> | Swab or body fluid in viral transport media. |
| <strong>PROCESSING</strong> | Refrigerate immediately after collection |
| <strong>TRANSPORT</strong> | 2 to 8 degrees C |
| <strong>TIME CRITICAL</strong> | Must be received in our lab within 72 hours of collection |
| <strong>LABEL</strong> | Patient’s full name or unique ID number, and collection date |
| <strong>REQUISITION</strong> | <a href="#">Infectious Disease Test Request Form</a> |
| <strong>TEST COMPLETE</strong> | Tested one to two times per week |
| <strong>RESULTS</strong> | Detected or Not Detected |
| <strong>REPORTED</strong> | Mail, e-mail, or fax, as established with provider |
| <strong>NOTE</strong> | Specimens collected using wood swabs will not be accepted |
| <strong>CONTACT</strong> | Virology Section (801) 965-2584 |</p>
<table>
<thead>
<tr>
<th><strong>TEST</strong></th>
<th>Rabies (animal specimens only)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>METHOD</strong></td>
<td>Fluorescent antibody (FA)</td>
</tr>
<tr>
<td><strong>AVAILABLE</strong></td>
<td>Local health departments, animal control agencies and state veterinary diagnostic laboratories only</td>
</tr>
<tr>
<td><strong>PATIENT PREP</strong></td>
<td>Animal must be euthanized</td>
</tr>
<tr>
<td><strong>SPECIMEN</strong></td>
<td>Bats = entire animal</td>
</tr>
<tr>
<td></td>
<td>Other animals = head only</td>
</tr>
<tr>
<td><strong>COLLECT IN</strong></td>
<td>Absorbent material and leak proof container</td>
</tr>
<tr>
<td><strong>PROCESSING</strong></td>
<td>Keep at 2 to 8 degrees C</td>
</tr>
<tr>
<td><strong>TRANSPORT</strong></td>
<td>2 - 8 degrees C</td>
</tr>
<tr>
<td><strong>TIME CRITICAL</strong></td>
<td>Must be received in our lab within 72 hours</td>
</tr>
<tr>
<td><strong>LABEL</strong></td>
<td>Unique identification number or victim name and collection date</td>
</tr>
<tr>
<td><strong>REQUISITION</strong></td>
<td>Rabies Test Request Form</td>
</tr>
<tr>
<td><strong>TEST COMPLETE</strong></td>
<td>Next working day</td>
</tr>
<tr>
<td><strong>RESULTS</strong></td>
<td>Negative or positive for Rabies by FA</td>
</tr>
<tr>
<td><strong>REPORTED</strong></td>
<td>Mail, e-mail, or fax, as established with provider</td>
</tr>
<tr>
<td><strong>NOTE</strong></td>
<td>Testing will incur a fee when national guidelines for submission are not followed.</td>
</tr>
<tr>
<td><strong>CONTACT</strong></td>
<td>Virology Section (801) 965-2584</td>
</tr>
</tbody>
</table>
Virology

*Virus Identification – Respiratory Panel*

**TEST**
Respiratory Screen (Adenovirus; Coronavirus (229E, HKU1, NL63, OC43); Human Metapneumovirus; Rhino/Enterovirus; Influenza A and B; Parainfluenza 1-4; Respiratory Syncytial Virus [RSV]; *Bordetella pertussis*, *C. pneumoniae*; *M. pneumoniae*.)

**METHOD**
FilmArray/PCR

**AVAILABLE**
All clients

**PATIENT PREP**
Use aseptic collection technique

**SPECIMEN**
Nasopharyngeal swab (NPS), nasal swab, and nasal wash.

**COLLECT IN**
Viral transport media (VTM) collection tubes.

**PROCESSING**
Keep at 2 to 8 degrees C for up to 3 days, or <15 degrees C for up to 30 days.

**TRANSPORT**
On Cold packs if not frozen on dry ice if frozen.

**TIME CRITICAL**
Must be received in our lab within 72 hrs of collection if not frozen and within 30 days if frozen.

**LABEL**
Patient’s full name or unique ID number, and collection date

**REQUISITION**
Infectious Disease Test Request Form

**TEST COMPLETE**
Tested daily

**RESULTS**
Detected or Not Detected for each organism

**REPORTED**
Mail, e-mail, or fax, as established with provider

**NOTE**
Specimens collected using wood swabs will not be accepted.

**CONTACT**
Virology Section (801) 965-2584
Virology
General Virus Culture

TEST General virus culture

METHOD Shell-vial/tube culture

AVAILABLE All clients

PATIENT PREP Use aseptic collection technique

SPECIMEN Respiratory: Bronchoalveolar lavage (BAL), nasopharyngeal and nasal aspirates, swabs, or washings, or tracheal aspirate, sputum, throat, tissue (lung, etc.).
Non-Respiratory: Eye swab, stool, genital, tissue (brain, colon, kidney, liver, etc.), or urine.

COLLECT IN Fluid, stool, or tissue transfer into sterile leak-proof container. Place swabs in viral transport media (VTM) collection tubes.

PROCESSING Place each specimen in a separate sealed bag. Keep at 2-8°C at all times.

TRANSPORT On Cold packs

TIME CRITICAL Must be received in our lab within 72 hrs of collection

LABEL Patient’s full name or unique ID number, and collection date

REQUISITION Infectious Disease Test Request Form

TEST COMPLETE Within 10 days of receiving sample

RESULTS Virus Isolated or No Virus Isolated

REPORTED Mail, e-mail, or fax, as established with provider

NOTE Respiratory specimens exhibiting evidence of virus growth will be confirmed by FilmArray Respiratory Panel. Non-respiratory specimens exhibiting evidence of virus growth will be confirmed by PCR or fluorescent antibody stain where available. Specimens that are not identified in our laboratory may be referred to an outside laboratory for confirmation. Fees for additional testing will apply.

CONTACT Virology Section (801) 965-2584
Appendix A:
Appendix A: Bioterrorism Specimen Collection and Transport Guidelines

Bacillus anthracis

**ACCEPTABLE SPECIMENS:** Specimens of choice will be determined by the clinical presentation. *Environmental or nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or UDOH directly.*

1. Cutaneous lesions
   a. Vesicular stage: aseptically collect vesicular fluid on sterile swabs from previously unopened vesicle.
      
   **NOTE:** The anthrax bacilli are most likely to be seen by Gram stain in the vesicular stage.
   b. Eschar stage: collect eschar material by CAREFULLY lifting the eschar’s outer edge. Insert a sterile swab, and then slowly rotate for 2-3 seconds beneath the edge of the eschar without removing it. Transport directly to laboratory at room temperature. For transport time >1 h and < 24 h, transport at 2 to 8°C.

2. Stool – Transfer ≥5 grams of stool directly into a clean, dry, sterile, wide-mouth, leak-proof container. Transport unpreserved stool to laboratory within 1 h. For transport time >1 h and < 24 h, refrigerate at 2 to 8°C. Cary-Blair or equivalent transport media is acceptable.

3. Rectal swab – For patients unable to pass a specimen, obtain a rectal swab by carefully inserting a swab 1 inch beyond the anal sphincter. Transport directly to laboratory at room temperature. For transport time >2 h and < 24 h, transport at 4°C.

4. Blood culture – Collect appropriate blood volume and number of sets per laboratory protocol. **Note:** In later stages of disease (2-8 days post-exposure), blood cultures may yield the organism, especially if specimens are obtained prior to antibiotic treatment. Transport directly to laboratory at room temperature.
   
   **Note:** Whole blood collected in a purple-top tube may be requested for additional tests.

5. Sputum – Collect >1 mL of a lower respiratory specimen into a sterile container. Inhalational anthrax usually does not result in sputum formation. Transport in sterile, screw-capped container at room temperature when transport time is <1 h. For transport time >1 h and < 24 h, transport at 4°C.

6. CSF, tissue, autopsy samples – Collect aseptically and place in sterile containers. Transport directly to laboratory at room temperature.
**Brucella species**

**ACCEPTABLE SPECIMENS:** Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or the UDOH directly.

1. **Blood or bone marrow** – These are the sources from which *Brucella* spp. is most often isolated. Standard blood culturing systems. Transport at room temperature. 
   **Note:** Whole blood collected in blue, purple or green top tubes may be requested for additional tests.

2. **Serum** – For serologic diagnosis, an acute phase specimen should be collected as soon as possible after onset of disease. A convalescent phase specimen should be collected >14 days after the acute specimen. Preferably send at least 1 mL, refrigerated.

3. **Spleen, Liver, or abscess** – *Brucella* spp. are occasionally isolated from these sources. Selected media can be used for isolation of *Brucella* spp. from specimens with mixed flora. Specimens should be refrigerated at 2-8°C until inoculation. Tissue must be kept moist. Add several drops of sterile saline if necessary.

**Burkholderia mallei and Burkholderia pseudomallei**

**ACCEPTABLE SPECIMENS:** Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or UDOH directly.

1. **Blood** – Collect blood specimens before antibiotics are administered, when possible. Collect appropriate volume and number of sets per laboratory protocol.

2. **Urine** – Collect a midstream clean-catch specimen or a catheterization specimen.

3. **Abscesses, tissue aspirates, fluids** – Collect tissues and fluids rather than swabs, when possible.

4. **Special situations** – Throat, nasal, skin or sputum specimens may be helpful in screening exposed individuals if a release of *B. mallei* or *B. pseudomallei* has been confirmed.

**Clostridium botulinum**

**ACCEPTABLE SPECIMENS** – Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or UDOH directly.

**Foodborne Botulism**


2. Autopsy samples – serum gastric and intestinal contents

3. Food samples and/or empty containers with the remnants of the food

**Infant Botulism: Child less than 12 months of age.**

1. Feces or return from a sterile water enema.

2. Serum – generally not useful since an infant’s body mass is small and the toxin is quickly absorbed.

3. Autopsy samples – intestinal contents from different levels of the small and large intestine.

4. Food and environmental (soil and house dust) as appropriate per the investigation.
Wound Botulism

1. Serum
2. Exudate, tissue or swab samples of wound (transported in anaerobic transport media)
3. Isolate of suspect *Clostridium botulinum* submitted in an anaerobic transport vessel
4. Feces or return from a sterile water enema (wound may not be the source)

Intentional toxin release or Laboratory Accident

1. Serum, Nasal swab
2. Feces or return from a sterile water enema
3. Food
4. Environmental swabs

MATERIALS

1. **Media**: Anaerobic media (chopped meat or equivalent). Follow standard laboratory protocols.
2. **Supplies**
   a. Port-A-Cul vials or equivalent
   b. Leakproof containers (i.e., sealed plastic bags, plastic containers)
   c. Petroleum jelly or petrolatum or equivalent (i.e., Vaseline)
   d. Sterile, non-bacteriostatic water
   e. Packaging materials

PROCEDURE

1. **Collection**
   a. **Feces**: Place into sterile unbreakable container and label carefully. Confirmatory evidence of botulism may be obtained from 10-50 gram quantities (Walnut size); botulism has been confirmed in infants with only “pea-sized” stool samples. The specimen must be kept cool or refrigerated, do not freeze unless an unavoidable delay of several days is anticipated. Freezing does not affect the ability to detect toxin, but does affect the ability to detect the organism.
   b. **Enema**: Place approximately 20 ml into sterile unbreakable container and label carefully. If an enema must be given because of constipation, a minimal amount of fluid (preferably non-bacteriostatic water) should be used to obtain the specimen so that the toxin will not be unnecessarily diluted. Transport in a Port-A-Cul vial to maintain anaerobiosis. Specimens must be kept cool or refrigerated.
   c. **Gastric aspirate or vomitus**: Place approximately 20 ml into sterile unbreakable container and label carefully. Transport in a Port-A-Cul vial to maintain anaerobiosis. Specimens must be kept cool or refrigerated.
   d. **Serum**: Use red top or separator type tubes to obtain serum (no anticoagulant). Samples should be obtained as soon as possible after the onset of symptoms and before antitoxin is given. Enough blood should be collected to provide at least 10 mL of serum (approximately 20 mL of whole blood). Serum volumes less than 3 ml will provide inconclusive results. Whole blood should not be sent as it typically undergoes excessive hemolysis during transit. Specimen should be kept cool or refrigerated, do not freeze unless an unavoidable delay of several days is anticipated.
e. **Tissue, wounds, or exudates:** Place into sterile unbreakable container and label carefully. Specimens should be placed in Port-A-Cul vials and sent to the appropriate laboratory, preferably without refrigeration, for attempted isolation of *C. botulinum*. Swabs of superficial wounds are not acceptable for anaerobic culture. Maintain specimens at room temperature.

f. **Postmortem:** Obtain specimens of intestinal contents from different levels of small and large intestines. Place approximately 10 grams per specimen into sterile unbreakable container and label carefully. Obtain gastric content, serum and tissue as appropriate.

g. **Culture:** Ship suspicious isolates anaerobically (overlay liquid media with 2-inch layer of sterile petroleum jelly; melt/temper prior to overlaying culture). Cultures may be shipped at room temperature or refrigerated.

h. **Food specimens:** Foods should be left in their original containers if possible, or placed in sterile unbreakable containers and labeled carefully. Place containers individually in leakproof containers (i.e., sealed plastic bags) to prevent cross-contamination during shipment. Empty containers with remnants of suspected foods can be examined. Foods most likely to allow growth of *C. botulinum* will have a pH of 3.5-7.0 (usually 5.5-6.5). Possible foods include:
   - Home canned products having a low acidity (pH of 4.6 or greater)
   - Foods with low salt or low sugar content
   - Foods that are held at temperatures that allow the organism to grow (optimal 35°C, but as low as 15°C)
   - Foods that are consumed without prior heating.
Foods that are commercially processed are rarely incriminated; however, the threat to public health is much greater with a commercial foodstuff. Unopened containers are to be sent to the U.S. Food and Drug administration (FDA), with prior arrangement. Keep the samples cool or refrigerated, do not freeze.

i. **Swab samples:** Send swabs in an anaerobic transport medium (e.g., Port-A-Cul tubes). For aerosolized botulinum toxin exposure, obtain nasal swabs for culture for *C. botulinum*. For toxin testing, serum should be used. Swabs may be shipped at room temperature or refrigerated.

**Specimens that are frozen must remain frozen until it is time to perform the test.**

2. **Transportation** – For complete guidelines, refer to packaging and shipping protocol at http://health.utah.gov/lab.

a. If an unavoidable delay of several days is anticipated, the specimens (serum or stool) should be kept frozen and then packed in an insulated container with dry ice and proper cushioning material for shipment. Freezing does not affect the ability to detect botulinum toxin in specimens; freezing does reduce the probability of recovering *C. botulinum*. Since direct detection of toxin provides the best laboratory confirmation of botulism, priority should be given to preserving preformed toxin prior to transport.

b. The receiving laboratory (UPHL) should be notified in advance by telephone as to when and how specimens will be shipped and when they will arrive.
**Coxiella burnetii**

**ACCEPTABLE SPECIMENS** Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or the UDOH directly.

1. **Serum:** Collect serum (red-top or serum separator tube, tiger-top tube) as soon as possible after onset of symptoms (acute phase) and with a follow-up specimen (convalescent phase) at ≥ 14 days for serological testing.
2. **Blood:** Collect blood in EDTA (lavender) or sodium citrate (blue) Vacutainer tubes and maintain at 4°C for storage and shipping for PCR or special cultures. If possible, collect specimens prior to antimicrobial therapy.
3. **Tissue, body fluids, nasopharyngeal swabs, tracheal/bronchial washings, lesion exudates:** Specimens can be kept at 2-8°C if transported within 24 hours. Store frozen at -70°C or on dry ice.
4. **Bacterial isolates**

**Francisella tularensis**

**ACCEPTABLE SPECIMENS:** Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or the UDOH directly.

Specimens of choice will be determined by the clinical presentation.

1. **Blood Culture (Septicemic)** – Collect appropriate blood volume and number of sets per established laboratory protocols. Standard blood culturing system (10-20ml/bottle). Transport directly to Sentinel Laboratory at room temperature. Hold at room temperature until placed onto the blood culture instrument or incubator. Do not refrigerate. Follow established laboratory protocol for processing blood cultures.
2. **Biopsied tissue or scraping/aspirate of ulcer or lesion** – A swab of the ulcer is an acceptable alternative. Submit tissue, scraping, or aspirate in a sterile container. For small tissue samples, add several drops of sterile normal saline to keep the tissue moist. Transport at room temperature for immediate processing. If processing of specimen is delayed, keep specimen chilled (2-8°C).
3. **Swabs:** Obtain a firm sample of the advancing margin of the lesion. If using a swab transport carrier, the swab should be reinserted into the transport packet and the swab fabric moistened with the transport medium inside the packet. Transport at 2-8°C; room temperature is acceptable. If processing of specimen is delayed, keep specimen chilled (2-8°C).
4. **Lower respiratory tract (pneumonic) sputum or aspirate** – Transport specimen (>1 ml) in a sterile, screw-capped container at room temperature if transport will be <2 hours. If transport will be 24 hours or less, store and transport at 4°C.
5. **Serum** – for serological diagnosis – An acute phase specimen should be collected as soon as possible after onset of disease. A convalescent phase specimen should be collected 21 days after the acute specimen. Collect blood (a minimum of 5 ml) by venipuncture into a tube without anticoagulant. Allow blood to clot and then separate serum into a separate tube. Refrigerate and transport as soon as possible.
Variola virus

1. **ACCEPTABLE SPECIMENS (for Variola, Vaccinia, Varicella and Non-variola Orthopox)** – Samples are not processed by Sentinel Laboratories. Please contact UDOH directly.

2. **Biopsy** – Aseptically place two to four portions of tissue into a sterile, leakproof, freezable container. If transport time will be ≤6 hours, transport at 4°C. Store specimens at -20°C to -70°C.

3. **Scabs** – Aseptically place scrapings/material into a sterile, leak-proof, freezable container. If transport time will be ≤6 hours, transport at 4°C. Store specimens at -20°C to -70°C.

4. **Vesicular fluid** – Collect fluid from separate lesions onto separate sterile swabs. Be sure to include cellular materials from the base of each respective vesicle. If transport time will be ≤6 hours, transport at 4°C. Store specimens at -20°C to -70°C.

Yersinia pestis

**ACCEPTABLE SPECIMENS** – Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories. Please contact local law enforcement or UDOH directly.

Specimens of choice will be determined by the clinical presentation.

1. **Lower respiratory tract (pneumonic)** – Bronchial wash or transtracheal aspirate (≥1 ml). Sputum may be examined but it is not advised because of contamination by normal throat flora. Transport specimens in sterile, screw-capped containers at room temperature to the Sentinel Laboratory. If it is known that material will be transported within 2-24 hours after collection, then store the container and transport at 2-8°C.

2. **Blood (septicemic)** – Collect appropriate blood volume and number of sets per established lab protocol.
   
   **Note:** In suspected cases of plague, and additional blood or broth culture (general nutrient broth) should be incubated at room temperature (22-28°C), the temperature at which *Y. pestis* grows faster. Do not shake or rock additional broth culture so that the characteristic growth formation of *Y. pestis* can be clearly visualized. Transport samples directly to the Sentinel Laboratory at ambient temperature. Hold them at ambient temperature until they are placed onto the blood culture instrument or incubator. Do not refrigerate. Follow established laboratory protocol for processing blood cultures.

3. **Aspirate of involved tissue (bubonic) or biopsied specimen** – Liver, spleen, bone marrow, lung. **Note:** Aspirates may yield little material; therefore, a sterile saline flush may be needed to obtain an adequate amount of specimen. Syringe and needle of aspirated sample should be capped, secured by tape, and sent to the Sentinel Laboratory. Submit tissue or aspirate in a sterile container. For small samples, add 1-2 drops of sterile normal saline to keep the tissue moist. Transport the sample at room temperature for immediate processing. Keep the specimen chilled if processing of the specimen will be delayed.

4. **Swabs** – A swab of tissue is not recommended. However, if a swab specimen is taken, the swab should be reinserted into the transport package for transport.
Appendix B: Test List (alphabetical by organism)

<table>
<thead>
<tr>
<th>Test</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid fast bacillus</td>
<td></td>
</tr>
<tr>
<td><strong>Stain (AFB smear)</strong></td>
<td>34</td>
</tr>
<tr>
<td><strong>Culture and susceptibility</strong></td>
<td>35</td>
</tr>
<tr>
<td>Adenovirus (respiratory panel)</td>
<td>45</td>
</tr>
<tr>
<td><strong>Bacillus anthracis (Anthrax)</strong></td>
<td>10</td>
</tr>
<tr>
<td>Bacterial pathogens in food (limited to outbreak detection)</td>
<td>5</td>
</tr>
<tr>
<td><strong>Bordetella pertussis</strong></td>
<td></td>
</tr>
<tr>
<td>PCR Referral</td>
<td>30</td>
</tr>
<tr>
<td>Respiratory panel</td>
<td>45</td>
</tr>
<tr>
<td>Botulism</td>
<td></td>
</tr>
<tr>
<td>Detection</td>
<td>13</td>
</tr>
<tr>
<td>Toxin</td>
<td>13</td>
</tr>
<tr>
<td><strong>Brucella species (Brucellosis)</strong></td>
<td>11</td>
</tr>
<tr>
<td><strong>Burkholderia: mallei and pseudomallei</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>Chlamydia pneumoniae (respiratory panel)</strong></td>
<td>45</td>
</tr>
<tr>
<td><strong>Chlamydia trachomatis</strong></td>
<td>38</td>
</tr>
<tr>
<td><strong>Clostridium botulinum - Bioterrorism</strong></td>
<td>13</td>
</tr>
<tr>
<td>Coronavirus (respiratory panel)</td>
<td>45</td>
</tr>
<tr>
<td><strong>Coxiella burnetii (Q-fever)</strong></td>
<td>14</td>
</tr>
<tr>
<td>Cytomegalovirus</td>
<td>41</td>
</tr>
<tr>
<td><strong>Escherichia coli (EIA)</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Escherichia coli serotyping (shiga-toxin producing)</strong></td>
<td></td>
</tr>
<tr>
<td>Enteroviruses</td>
<td>41</td>
</tr>
<tr>
<td><strong>Francisella tularensis (Tularemia)</strong></td>
<td>16</td>
</tr>
<tr>
<td><strong>Haemophilus influenza serotyping</strong></td>
<td>6</td>
</tr>
<tr>
<td>Hantavirus</td>
<td>22</td>
</tr>
<tr>
<td>Hepatitis B virus</td>
<td>3</td>
</tr>
<tr>
<td>Hepatitis C virus</td>
<td>3</td>
</tr>
<tr>
<td>Herpes simplex virus</td>
<td>43</td>
</tr>
<tr>
<td>Human immunodeficiency virus (HIV)</td>
<td></td>
</tr>
<tr>
<td>Ag/Ab Combo Screening Test</td>
<td>24</td>
</tr>
<tr>
<td>1/2 Multi-spot Rapid Test</td>
<td>25</td>
</tr>
<tr>
<td>Human metapneumovirus (respiratory panel)</td>
<td>45</td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>39</td>
</tr>
<tr>
<td>Influenza virus</td>
<td></td>
</tr>
<tr>
<td>Respiratory panel</td>
<td>45</td>
</tr>
<tr>
<td>A/B Typing/ A subtyping/ B genotyping PCR</td>
<td>42</td>
</tr>
<tr>
<td><strong>Legionella</strong></td>
<td>6</td>
</tr>
<tr>
<td>Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV)</td>
<td>17</td>
</tr>
<tr>
<td>Mycobacterium tuberculosis complex</td>
<td>36</td>
</tr>
<tr>
<td>Mycoplasma pneumoniae (respiratory panel)</td>
<td>45</td>
</tr>
</tbody>
</table>
Neisseria gonorrhoea (GC)
  Culture confirmation 8
  Amplified (NAAT) 38

Neisseria meningitidis 8
Norovirus PCR 31
Orthopox viruses 18
Parainfluenza virus type 1, 2, 3, 4 (respiratory panel) 45
Quantiferon (Tuberculosis) 29
Rabies (only animal specimens accepted) 44
Respiratory Syncytial Virus (RSV) (respiratory panel) 45
Rhinovirus/Enterovirus (respiratory panel) 45
Ricin toxin 19
Salmonella serotyping 6
Shigella serotyping 6
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Stool culture for bacterial pathogens 9
St. Louis Encephalitis Virus 33
Syphilis
  IgG 26
  RPR 27
  Treponema pallidum agglutination (TP-PA) 28

Trichomonas vaginalis 40
Tuberculosis (Quantiferon) 29
Varicella zoster (chicken pox) 43
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Western Equine Encephalitis Virus 33
West Nile Virus
  IgM 32
  PCR 33

Yersinia pestis (Plague) 21
Appendix C: Test Request Forms

Infectious Disease Test Request Form

Rabies Test Request Form

COSC Specimen Submittal Form

BT Environmental Specimen Form
## INFECTIOUS DISEASE TEST REQUEST FORM

### PATIENT INFORMATION:

<table>
<thead>
<tr>
<th>PATIENT STATE OF RESIDENCE:</th>
<th>PATIENT COUNTY OF RESIDENCE:</th>
<th>ZIP CODE:</th>
<th>DATE OF BIRTH (mm/dd/yyyy)</th>
<th>AGE</th>
<th>SEX</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PATIENT NAME (Last, First):</th>
<th>Is Patient Insured?</th>
<th>STI TESTING ONLY:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ] Yes</td>
<td>[ ] No</td>
</tr>
<tr>
<td>If Yes, will insurance be billed?</td>
<td>[ ] Yes</td>
<td>[ ] No</td>
</tr>
<tr>
<td></td>
<td>[ ] Yes</td>
<td>[ ] No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PATIENT ID #</th>
<th>ETHNICITY</th>
<th>RACE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ] Hispanic</td>
<td>[ ] Black or African American</td>
</tr>
<tr>
<td></td>
<td>[ ] Non-Hispanic</td>
<td>[ ] American Indian or Alaska Native</td>
</tr>
<tr>
<td></td>
<td>[ ] Asian</td>
<td>[ ] Native Hawaiian or other Pacific Islander</td>
</tr>
</tbody>
</table>

### PROVIDER INFORMATION:

<table>
<thead>
<tr>
<th>Provider Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider Name:</td>
</tr>
<tr>
<td>Provider Address:</td>
</tr>
<tr>
<td>Provider Phone:</td>
</tr>
</tbody>
</table>

### SPECIMEN COLLECTION DATE AND TIME:

<table>
<thead>
<tr>
<th>(mm/dd/yy)</th>
<th>Time:</th>
</tr>
</thead>
</table>

### SPECIMEN SOURCE/SITE (CHOOSE 1):

<table>
<thead>
<tr>
<th>Blood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood sample type:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental (specify):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Urethra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethra sample type:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plasma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma sample type:</td>
</tr>
</tbody>
</table>

### BACTERIOLOGY/TUBERCULOSIS TESTS:

<table>
<thead>
<tr>
<th>REQUIRED Shipping Temperature:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bacteriology Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteriology ID / Referral</td>
</tr>
<tr>
<td>Mycobacterial culture</td>
</tr>
<tr>
<td>Mycobacterial referral</td>
</tr>
</tbody>
</table>

### VIROLOGY AND IMMUNOLOGY TESTS:

<table>
<thead>
<tr>
<th>Virus Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Panel (FilmArray)</td>
</tr>
<tr>
<td>Adenovirus, Coronavirus (229E, HKU1, NL63, OC43), Human Metapneumovirus, Rhino/Enterovirus, Influenza A, Influenza B, Parainfluenza 1-4, RSV, Bordetella pertussis, C. pneumoniae, M. pneumoniae</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Herpes Simplex/Varicella zoster PCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSV-1, HSV-2, VZV</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other virus (general culture)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virus suspected:</td>
</tr>
</tbody>
</table>

| Influenza | |
|-----------|
| Influenza A & B virus PCR (with subtyping) |
| Hospitalized with Influenza-like illness |
| Other (i.e., cluster investigation) |

<table>
<thead>
<tr>
<th>Hepatitis C Antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ] Yes</td>
</tr>
</tbody>
</table>

### BIOTERRORISM TESTS:

<table>
<thead>
<tr>
<th>[ ] Yes</th>
<th>[ ] No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notify Lab before submitting:</td>
<td></td>
</tr>
<tr>
<td>Bacillus anthracis (Detection/ID)</td>
<td></td>
</tr>
<tr>
<td>Brucella species (Detection/ID)</td>
<td></td>
</tr>
<tr>
<td>Brucella antibody</td>
<td></td>
</tr>
<tr>
<td>Burkholderia mallei/pseudomallei (Detection/ID)</td>
<td></td>
</tr>
<tr>
<td>Clostridium botulinum culture &amp; toxin</td>
<td></td>
</tr>
<tr>
<td>Coviella burnetii (Detection)</td>
<td></td>
</tr>
<tr>
<td>Francisella tularensis (Detection/Identification)</td>
<td></td>
</tr>
<tr>
<td>F. tularensis antibody</td>
<td></td>
</tr>
<tr>
<td>Orthopox viruses Detection</td>
<td></td>
</tr>
<tr>
<td>Virus Suspected:</td>
<td></td>
</tr>
<tr>
<td>Vaccinia virus</td>
<td></td>
</tr>
<tr>
<td>Varicella zoster virus</td>
<td></td>
</tr>
<tr>
<td>Variola virus</td>
<td></td>
</tr>
<tr>
<td>Yersinia pestis (Detection/Identification)</td>
<td></td>
</tr>
<tr>
<td>Yersinia pestis antibody</td>
<td></td>
</tr>
<tr>
<td>Other (specify):</td>
<td></td>
</tr>
</tbody>
</table>

### ADDITIONAL INFORMATION:

| [ ] Other Disease Suspected: | [ ] Referral Test (additional form(s) REQUIRED) specify: |

### COMMENTS:

<table>
<thead>
<tr>
<th>COMMENTS:</th>
<th></th>
</tr>
</thead>
</table>

*Contact UPHL for additional form(s)
# Rabies Testing Request Form

**Utah Public Health Laboratory**  
4431 S 2700 W Taylorsville, UT 84129  
Telephone: (801) 965-2584    Fax: (801) 965-2551

---

**1. PROVIDER/SENDER INFORMATION**

<table>
<thead>
<tr>
<th>Provider Code</th>
<th>City/Town</th>
<th>Phone Number: ( )</th>
</tr>
</thead>
</table>

**2. OWNER INFORMATION (or responsible party)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address: No./Street/Apt.#</th>
<th>Phone Number: ( )</th>
</tr>
</thead>
</table>

**3. SPECIMEN INFORMATION**

<table>
<thead>
<tr>
<th>Species &amp; Breed</th>
<th>Was Animal Quarantined?</th>
<th>If Yes, how many days?</th>
<th>Date:</th>
<th>Cause of Death:</th>
<th>Animal Vaccination History:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ] Yes</td>
<td>[ ] No</td>
<td>[ ] Died in Quarantine</td>
<td>[ ] Natural</td>
<td>[ ] Rabies Vaccinated on (<strong>/</strong>/__)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[ ] Not Rabies Vaccinated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[ ] Unknown</td>
</tr>
</tbody>
</table>

**Reason for Rabies Testing:**

- [ ] Human Exposure  
- [ ] Pet Exposure  
- [ ] Acting Sick

**Symptoms:** _____________________________________________________

**Animal Vaccination History:**

- [ ] Rabies Vaccinated on (__/__/__)  
- [ ] Not Rabies Vaccinated  
- [ ] Unknown

**4. EXPOSURE INFORMATION**

<table>
<thead>
<tr>
<th>Person(s) Exposed</th>
<th>Exposure Date <em><strong>/</strong></em>/___</th>
<th>Animal(s) Exposed</th>
<th>Exposure Date <em><strong>/</strong></em>/___</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Address: No./Street/Apt.#</th>
<th>Species</th>
<th>Age</th>
<th>City/Town</th>
<th>State</th>
<th>Zip Code</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Phone # ( )</th>
<th>Physician Name</th>
<th>Phone # ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type of Exposure:**

- [ ] Bite  
- [ ] Scratch  
- [ ] Lick  
- [ ] Other  
- [ ] Unknown

<table>
<thead>
<tr>
<th>Body Site</th>
<th>Severity</th>
<th>Type of Exposure</th>
<th>Body Site</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>[ ] Bite</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Scratch</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Lick</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Circumstance of Exposure:**

- [ ] Capture  
- [ ] Specimen Prep  
- [ ] Handling  
- [ ] Other  
- [ ] Provoked Attack  
- [ ] Unprovoked Attack

<table>
<thead>
<tr>
<th>Circumstance of Exposure: (Check One)</th>
<th>[ ] Fight</th>
<th>[ ] Vicinity</th>
<th>[ ] Dead Animal Contact</th>
<th>[ ] Other</th>
</tr>
</thead>
</table>

- [ ] Capture  
- [ ] Specimen Prep  
- [ ] Handling  
- [ ] Other  
- [ ] Provoked Attack  
- [ ] Unprovoked Attack

---

Heads must be removed from any animals larger than a gopher. **DO NOT** send live animals with the exception of bats. (Container must be labeled "Live Bat"). Heads must be wrapped in newspaper, then placed in plastic bag. If shipping is necessary, please put plastic bag containing head in a leakproof container packed on wet ice. **DO NOT** send by U.S. Mail except by special delivery. Samples that do not meet the guidelines set forth by the National Compendium of Animal Rabies (http://www.cdc.gov/mmwr/pdf/rr/rr6006.pdf) or with incomplete paperwork may be subjected to a $15 fee.

**5. RABIES DIRECT FLUORESCENT ANTIBODY TEST RESULTS**

**Reported By:**_______ Date ___/___/___

<table>
<thead>
<tr>
<th>[ ] Positive (Rabid)</th>
<th>[ ] Negative (Not Rabid)</th>
<th>[ ] Specimen Unsatisfactory</th>
</tr>
</thead>
</table>

**Comments________________________________________________________________________________________**
**BT Specimen Submission Form: Environmental Threat**

**SPECIMEN SCREENING INFORMATION**

<table>
<thead>
<tr>
<th>SAMPLE SCREENED BY:</th>
<th>Technician Name(s)</th>
<th>Organization(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCIDENT IDENTIFIER:</td>
<td>Address</td>
<td>Telephone(s)</td>
</tr>
</tbody>
</table>

**Specimen was screened for:** (Check any applicable boxes and write additional information if the box is checked)

- [ ] RADIATION
  - Screening method(s): 
  - Background reading: 
  - Sample reading (units): 

- [ ] EXPLOSIVES
  - Screening method(s): 
  - Sample results: 

- [ ] CHEMICALS
  - Oxidizers
    - Screening method(s): 
    - Sample results: 
  - Corrosives
    - Screening method(s): 
    - Sample results: 
  - Flammability
    - Screening method(s): 
    - Sample results: 
  - Volatile Organic Compounds
    - Screening method(s): 
    - Sample results: 

**Chain-of-Custody**

<table>
<thead>
<tr>
<th>From:</th>
<th>To:</th>
<th>Date &amp; Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Utah Public Health Laboratory does not accept explosive, incendiary, or radioactive materials.

Call the 24/7 Laboratory BT Emergency Cell phone at **801-560-6586** with questions.

Additional comments about incident or sample: