Real-time PCR

Real-time PCR is the most sensitive technique for nucleic acid detection based on the measurement of a fluorescent signal after the accumulation of a PCR product. Real-time PCR assays have a forward primer, reverse primer and a fluorescently labeled probe. Data collected in real time significantly decreases false positive and negative results.

Biosecurity and Monitoring

Implementing biosecurity protocols in equine veterinary hospitals significantly reduces the risk of environmental contamination and infectious disease spread. Beneficial monitoring and surveillance practices include:

- Screening of recently admitted patients with enteric or respiratory signs.
- Daily surveillance of high risk patients and patients developing respiratory or enteric signs compatible with contagious diseases.
- Weekly or biweekly testing of environmental samples (bedding, stalls, floor, equipment, feed, water).
- Confirmation of post-contamination clean up.
- Surveillance of patients during outbreaks.

Advantages of Using The Core Facility

Price is often a limiting factor when it comes to instituting biosecurity programs. At the Core Facility we offer reduced and competitive pricing for samples submitted in bulk. Time is also important as rapid intervention after detection of an infectious agent can prevent disease spread. Our quick turn-around time means you typically receive results the same day as sample receipt so you can make informed and prompt decisions to protect your patients and hospital.

Turn-around Time

Samples submitted Monday-Friday by 11am will be processed and reported within 24 to 48 business hours. Shipping on Friday and Saturday is not recommended as the laboratory is closed on Saturday and Sunday.

AFFORDABLE BIOSECURITY FOR YOUR HOSPITAL - A PEACE OF MIND

Emerging and nosocomial diseases are a growing concern in the veterinary community. Biosecurity practices instituted at veterinary hospitals have the goal to minimize environmental contamination and prevent spread of infectious organisms amongst hospitalized patients. Determining which diseases should be controlled and understanding their biology is key to every biosecurity program. When determining the infectious nature of a patient or even investigating apparent infectious disease outbreaks, it is essential to use accurate and quick diagnostic tools.

The Real-time PCR Research and Diagnostics Core Facility is proud to offer the first diagnostic biosecurity program to support cost-effective environmental and patient testing at your hospital. Each of the three pre-established biosecurity testing options have been designed to address the most common and potentially infectious pathogens in a hospital setting. Don’t see what you’re looking for? Customizable panels are also available to suit your specific needs. Please call the lab for details and pricing.

Why should I institute a biosecurity program at my hospital?

Biosecurity programs protect the health of patients by limiting exposure to potentially infectious agents. In hospital settings this is extremely important as immune compromised patients are even more susceptible to these pathogens. Enteric and respiratory diseases can spread by direct contact with infected patients, transient subclinical shedders, contaminated feed, bedding and equipment. Performing weekly or biweekly contamination checks of housing, equipment and surfaces will reduce the likelihood of spreading disease. Because contamination commonly occurs at low levels, a highly sensitive method of testing needs to be used. Real-time PCR is sensitive enough to detect low copies of the target pathogens, and allows for a speedy turn-around time.

Testing Options for Bulk Submissions

Salmonella spp. - testing performed on selenite enriched samples. In positive cases, MIC and aerobic identification can be performed upon request.

Enteric Panel - includes Salmonella spp., Clostridium difficile toxin A and Clostridium difficile toxin B.

Respiratory Panel - includes Influenza A (H3N8), Equine Arteritis Virus, Equine Herpesvirus 1 (neurotropic and non-neurotropic), Equine Herpesvirus 4, and Streptococcus equi subsp. equi.

Please see back panel of brochure for pricing.

Sample Submission

Ten or more samples must be submitted at one time to qualify for bulk submission pricing

Salmonella spp. - submit fresh or pre-enriched clinical samples (feces, fecal swabs, gastric reflux) or environmental samples (bedding, surface swabs/washes/gauze). Pre-enriched samples should be incubated in 25mL of selenite broth for 20 hours at 37°C (99°F). Any fresh sample received at the lab will be incubated overnight in selenite broth prior to testing for Salmonella spp. increasing turn-around time by one day. All samples should be submitted in a clean container (fecal cup for feces, plastic or glass blood tube for swabs and washes.).

Enteric Panel - Submit pre-enriched feces and fresh feces. Fresh feces will be tested directly for Clostridium difficile (toxins A and B), while enriched feces will be tested for Salmonella spp. If only fresh feces is submitted, overnight enrichment will take place at the lab, delaying turn-around time by one day.

Respiratory Panel - Submit nasal swab/wash, tracheal wash, or gullet pouch lavage in a red top tube (swabs), or leak proof container (washes).
**Pricing for Bulk Submissions**

Ten or more samples must be submitted at one time to qualify for bulk submission pricing.

**Test pricing:**
- *Salmonella spp.* - $18 per sample
- Enteric Panel - $32 per sample
- Respiratory Panel - $35 per sample

Samples testing positive for *Salmonella* spp. by PCR may be forwarded to the Microbiology laboratory at UC Davis for MIC and aerobic identification for an additional charge:

- **Minimum inhibitory concentration (MIC)** - $30
- **Aerobic Identification** - $15

**Supplies pricing:**
- Selenite Enrichment Broth: $32.00* for one liter
- Selenite Enrichment Broth: $34.00* for flat of 25 x 50 ml conical tubes with 25 ml selenite enrichment broth in each tube ($1.36 per tube)

*Price does not include shipping

**Sample Submission**

**Real-time PCR Core Facility**
3110 Tupper Hall
VM: Medicine and Epidemiology
University of California, Davis
One Shields Ave.
Davis, CA 95616

**Our Mission**

The Real-time PCR Research & Diagnostics Core Facility is a UC Davis-based special procedure laboratory offering research and diagnostic services for veterinary medicine. The Core Facility is dedicated to providing a stringent and valued-added diagnostic service for the veterinary community by combining semi-automated high throughput extraction systems and state-of-the-art laser-based equipment with over 10 years of PCR experience in the animal sector. Board certified veterinarians also provide consulting in the field of canine, feline and equine infectious diseases in order to address any specific topics or concerns associated with diagnostic testing.

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Website for test list, pricing, FAQ, and sample submission forms:
http://www.vetmed.ucdavis.edu/vme/taqmanservice/