Home

Titer Testing Service

Specific Information for international clients

Titer Testing Details

Titer Testing – Frequently Asked Questions

Canine Nomograph – What is it?

Outreach

Serum Submission Form

Printable Address Label

Links and References

Contact Us

CAVIDS Titer Testing

Titer Testing – Frequently Asked Questions

Canine Antibody FAQ

Antibody Testing Frequently Asked Questions – CAVIDS Laboratory

1. **What is an "antibody titer"?**
   A. Titer (pronounced "tight-er") is reported as a number which represents how many times a sample can be diluted and still show the functional effect tested for. In this case, we are looking at the ability of a dog or cat serum sample to interact with specific viruses. In-laboratory tests such as those done by CAVIDS Lab are *functional* since the sample is tested for capability to neutralize or inhibit living viruses. Our tests are also *quantitative* because we are looking for the endpoint – the last dilution before the antibody is no longer able to inhibit the virus because it has become too dilute. In-clinic antibody tests that give quick "yes/no" results are convenient when time is short. However, these tests are not a "titer" since there is no endpoint determination of antibody functionality. For many instances, these tests are appropriate for screening, and correlate fairly closely with functional, quantitative (TITER) tests.

2. **Is titer testing appropriate for all vaccine agents?**
   A. CAVIDS Lab tests for antibody against canine distemper virus, adenovirus (which causes infectious hepatitis), and parvovirus. We also test for antibody against feline parvovirus (which causes panleukopenia disease in cats). For all of these viruses, known titer thresholds for protection from infection have been determined, either by our own laboratory or by other scientists in this field. All of these agents are grouped as "Core Vaccines" by veterinary vaccine guidelines worldwide, and are strongly recommended for all puppies and kittens. Other vaccine agents are not good candidates for titer testing because immune thresholds are not known, or the vaccine is not able to completely prevent infection.

3. **What is special about "Core Vaccines"?**
   A. The core vaccines for dogs include distemper, parvovirus and adenovirus (which causes hepatitis). Feline core vaccines are a bit different, but the causative agent of panleukopenia is a parvovirus quite similar to canine parvovirus. The diseases these viruses cause are severe and often deadly. All of these vaccines are capable of inducing long lasting **sterile immunity**, which is an antibody level that is able to

completely neutralize these viruses so that infection does not occur. Disease causing virus is not able to enter the animal's cells and therefore is not able to replicate. The virus is rendered "sterile" by neutralizing antibody. Reaching this level of immunity is the highest goal of vaccination, and is the greatest gift and ultimate benefit these modified live vaccines offer. The Core Vaccines have saved countless dogs and cats from disease and death due to these viruses. **All puppies and kittens should receive these vaccines.**

4. **What is the benefit of titer testing? Why not simply revaccinate?**
    A. Vaccinal titer testing is a scientifically proven method of determining immunity and protection against the core vaccine agents. Even a so-called "fully vaccinated" dog may not be actually "immune". Titer testing helps to identify animals that would benefit from vaccination. On the other hand, already immune pets will not see any benefit to receiving another dose of the vaccine virus in question due to sterile immunity. While the risk of vaccine associated adverse reactions is small, even a small risk is not worth taking when there is no benefit to offset it.

5. **How often should titers be checked?**
    A. A three-year interval is appropriate for the majority of adult dogs and cats when quantitative tests are used. The manufacturers of in-clinic ("yes/no") screening tests recommend they be used annually. A titer test within the first 6 months of life and again at one year is appropriate for puppies.

6. **Tell me more about testing puppies for antibody: What about maternal antibody interference?**
    A. It is highly recommended to test puppies to ensure they have become immune after their initial vaccination(s). The biggest risk factor for failure of vaccine to immunize is when vaccine is neutralized by antibody that the puppy received passively from the mother at birth. While this maternal antibody is above a certain level, it will neutralize the infectious virus in modified live vaccines, just as antibody does when actively produced by an immune animal. However, maternal antibody is not actively being made by the puppy or kitten itself. With time, it is metabolized and disappears, leaving the puppy susceptible to infection. Puppy vaccines are given multiple times in order to be sure to catch the right moment when the vaccine virus can infect the puppy to do the job of immunizing her. If that moment is missed, the puppy goes through months of disease susceptibility until vaccination at one year induces immunity. It is much preferable to discover lack of immunity as soon as possible through titer testing rather than to find this out the hard way!

    Often we do not know what level of antibody the mother may have passed to her pups. In that case, the puppy series of vaccinations should be continued until 16 weeks of age, with titer testing completed 2 weeks later at 18 weeks of age. An in-clinic "yes/no" test can be used instead of titer testing, but this must wait until the puppy is 24 weeks of age or older since this test cannot differentiate between active and passive immunity as well as quantitative tests can.

    However, **when a nomograph has been completed** to determine the titers of the dam of a litter, we are able to determine conservatively when that antibody will be dissipated and no longer present to interfere with vaccination or with titer testing. We are able to "do the math" to determine active responses in the young vaccinate, sometimes at quite young ages when dam titers are low. When we know the amount of antibody the mother has, we can titer test the puppy at an age uniquely tailored to the litter. Confirming immunity in a young puppy allows the new family to have peace of mind during critical early socialization periods, such as puppy kindergarten. For more information about nomographs and puppy follow-up testing, please see the separate section in the website.

7. **Why don't you offer titer testing for other vaccine agents?**

A. Threshold of protection is not known for non-core vaccines. Often antibody induced by non-core vaccines only decreases severity of disease and does not prevent infection.

8. **Should I request a titer for adenovirus?**
   A. Canine adenovirus (infectious hepatitis) is one of the Core Vaccines. Over years of titer testing, our laboratory has found very few dogs that are not protected after receiving this vaccine at one year of age or older. It is recommended to check for antibody against this virus at least once in a dog's lifetime, either by a quantitative titer test or by an antibody screen.

9. **What if my dog has a completely negative titer?**
   A. If no antibody is detected, the pet is highly likely to benefit from a dose of vaccine, either a product that contains only the virus the pet is not protected against, or a combination product.

10. **What if titer is detectable but below the given "threshold"?**
    A. Adult dogs with titers that are detectable but below sterile immunity thresholds may benefit from a dose of vaccine. Antibody is not able to prevent infection at this level, but may decrease severity of disease.

11. **What if the titer is right at the threshold level?**
    A. These adult dogs are considered to be protected, and very likely have immune memory, however they *may* benefit by seeing a rise in titer after re-vaccination. The decision to revaccinate in this situation needs to take into account the general health and lifestyle of the dog.

12. **How has your laboratory determined protective thresholds?**
    A. Challenge of immunity trials conducted in past years have proven antibody levels that prevent disease-causing viruses from replicating. Immune dogs were completely protected by antibody above determined levels in the assays CAVIDS Laboratory uses, while susceptible dogs were not protected.

13. **What is the appropriate procedure for collecting and shipping blood for antibody testing?**
    A. Collect 1-3 mls of whole blood, allow to clot, and separate the serum. A minimum of ½ ml serum is required, and can be submitted in one tube.
    B. Wrap tube in padding such as bubble wrap or paper towels, and place in zip-lock plastic bag.
    C. Place completed submission form and payment into a separate plastic bag.
    D. If ambient temperatures approach or exceed 80F, include a frozen cold pack in a plastic bag. *Please do not freeze water in a bag as an alternative cold pack.*
    E. Place the sample(s), paperwork, +/- cold pack into a cardboard box or padded envelope. A Styrofoam cooler is usually not necessary.
    F. A prefilled address label is available to print and tape on to your package to simplify addressing. See the website.
    G. This sample is quite stable, and can be held at refrigerator temps for several weeks before testing.
    H. Separated serum may be frozen before shipment, but is not necessary.
    I. Ship by USPS, UPS, or FedEx as you wish, but keep in mind that there is no sample intake on the weekends and some holidays.
    J. More information an be found in the section of the website labelled "Titer Testing Details"

14. **Where can I find further resources about vaccines?**
    A. Please see the references section of the website

Home

Titer Testing Service

Specific Information for international clients

Titer Testing Details

Titer Testing – Frequently Asked Questions

Canine Nomograph – What is it?

Outreach

Serum Submission Form

Printable Address Label

Links and References

Contact Us

CAVIDS Titer Testing

Titer Testing Details

Payment – *Please enclose a check with your shipment. If other methods of payment are required, including the needs of international clients, please be in touch by phone or email to make arrangements.*

UPDATE: Beginning January 2020 CAVIDS will increase our fees by 9% for all tests, and then will implement a 3% annual increase each year following that.

Test Requested	Current Fee
CDV/CPV-2 panel	$44
Single CAV, CDV or CPV-2	$22

Canine Distemper/Parvo Titer Panel

Sample: ½ ml serum, can be stored in refrigerator up to 2 weeks before shipping

Price: $44 a sample

Result: quantitative titers, with endpoint and interpretation of protection.

Shipping: USPS priority mail (or similar) 2 day delivery. Overnight shipping is not necessary for this sample. Use shipping address listed on form (printable address label available in separate tab.) "Exempt Animal Specimen"

Packaging: padded envelope or box, protect serum vial from crushing, no cold pack needed when ambient temperatures below 80°F, separate plastic bags for serum and paperwork is recommended.

Test run: usually set up on Fridays

Reported: usually reported within 7-10 days of receipt of sample, result and interpretation sent to owner and/or veterinarian via email.

Payment: enclose a check payable to University of Wisconsin with completed serum submission form.

Form: please indicate history of most recent CDV/CPV-2 vaccination.