



Canine Reproductive Function Tests

Anti-Müllerian Hormone (AMH) Test for Ovarian Remnant Syndrome and Determination of Spayed/Castrated vs. Intact



Ovarian remnant syndrome testing consists of AMH and progesterone testing on a single sample. A positive AMH test is consistent with the presence of an ovarian remnant, but a negative AMH test does not rule out the presence of a remnant. The progesterone level is especially important when the AMH is negative. The cell population starts producing progesterone instead of AMH after ovulation, so high progesterone levels with an inconclusive or negative AMH is also diagnostic for an ovarian remnant.

The qualitative AMH test for dogs was developed to distinguish spayed from ovarian intact bitches after they have reached the age of sexual maturity (varies by breed) or castrated from intact/cryptorchid males from birth. A negative AMH test is consistent with a spayed female or castrated male, whereas a positive AMH test indicates the presence of ovarian or testicular tissue. Inconclusive results are usually the result of remnant situations.

Note: Intact females tested after reproductive senescence may have a negative AMH test.

1. Draw a baseline blood sample in a plain red-top collection tube with no additives (*i.e. no clot activators, gels, etc.*).
2. Allow blood sufficient time to clot at room temperature to avoid fibrin formation. The specimen should be refrigerated if time before centrifugation will be greater than 1 hour. It is recommended that samples spend 4 hours or less on the cells.
3. Centrifuge at a speed and time that will allow for adequate separation and sufficient sample yield (0.5 mL recommended).
4. Transfer serum to a vial (*plastic preferred*) suitable for shipping and frozen storage. Freeze serum if time before shipping to the laboratory will be 12 hours or more.
5. For accurate AMH testing, the sample should be received at least “cold or partially thawed.” Sending serum packed with cold or frozen cold packs using an overnight courier service will usually ensure the sample is received chilled.

Note: Avoid use of serum separator tubes due to possible assay interference in some instances.

GnRH- or hCG-Response Test: Testosterone for Males

The GnRH- (gonadotropin-releasing hormone) or hCG- (human chorionic gonadotropin)* response tests are useful for distinguishing fully castrated males from cryptorchid males or those with testicular remnants.

GnRH is preferred over hCG because of a decreased risk of an anaphylactic reaction.

*hCG: 1 IU = 1 USP, 1500 USP = 1 mg hCG

1. Draw a baseline blood sample in a plain red-top clot tube. Label this sample “pre”.
2. Inject 2.2 µg/kg of GnRH intramuscularly *or* 250 IU of hCG* subcutaneously.
3. Collect an additional blood sample 2 hours after injection. Label this sample “post”.
4. Follow the sample processing procedure (steps 2-4) below.
5. The paired samples should be submitted and tested together.

Progesterone Testing for Determination of Ovulation or Timing C-section

Progesterone analysis of serum samples is useful for distinguishing the different reproductive states. For bitches, it can be used to determine the time of the LH peak and predict ovulation. This will enable a planned breeding to be at an optimal time of fertility and also enables better coordination of the logistics involved for either natural mating or artificial insemination or for C-section.

1. Collect blood into a plain red-top collection tube. Refrigerate sample.
2. Allow blood adequate time to clot prior to centrifugation to avoid fibrin formation.
3. After centrifugation, transfer the serum into a vial suitable for shipping or frozen storage. Frozen sample storage is recommended unless samples are being shipped the day taken.
4. Ship samples with cold packs. A frozen specimen is not necessary, but the sample should arrive chilled.