



GENE CHECK NEWS

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Blood and Blood Tubes

Gene Check has been receiving an unusually high number of “problem” blood tubes. Either the blood has clotted or begun to degrade. This is a problem for our customers because poor blood quality often requires us to test the sample multiple times which lengthens our turnaround time. There are even rare cases when the blood is in such bad shape that we have to have the samples re-drawn. This is a last resort, as it is a costly option both for Gene Check and for the customer.

To understand why blood can be good or bad, it may help to know a little about blood itself. Blood is comprised of serum, red blood cells, and white blood cells. Serum is extracellular (outside of cells) fluid that contains proteins. Red blood cells (RBC) are responsible for carrying oxygen and nutrients to the other tissues, as well as taking waste away from the other tissues. White blood cells (WBC) are part of the immune system and are the only cells in blood that contain DNA. Clotted blood is bad for DNA tests (codon 171, spider, etc) because the DNA is locked in the clot. However, for infectious disease testing (Johne’s, OPP, B. ovis, etc.) clotted blood is actually preferable because all that is needed are the proteins in the serum fraction.

Because some tests require whole blood and others serum, there are several types of blood tubes, including red topped, purple (lavender) topped, red and gray topped, etc. The different tubes contain different additives to preserve the blood or to allow it to clot. Red topped tubes have no additive and, therefore, allow the blood to form a clot. These are good for infectious disease testing because the serum is readily available. Purple topped tubes contain EDTA, a chemical that prevents the blood from clotting.

To insure that EDTA will prevent clotting, it is important to mix the blood thoroughly in the tube (rock the tube back and forth several times - do not shake). If you use a syringe to collect the blood, transfer the blood quickly to the

purple capped tube. Blood clots very quickly in a syringe and once a clot starts, even EDTA cannot stop all the blood in the tube from clotting.

EDTA can prevent blood from clotting and help to preserve it. However, if the blood is kept at elevated temperatures for an extended period, it will begin to degrade. (Degraded blood looks nearly black in the tube.) Degradation involves the cells breaking open and releasing their contents, including DNA and DNA digesting enzymes. Therefore, when blood is degraded, DNA can also be degraded making it unsuitable for genetic testing. Keeping the tubes cool once the blood is drawn will prevent, or at least slow, degradation.

Blood Handling

When collecting blood in purple capped tubes for DNA testing:

1. Invert the tubes several times after the blood is drawn. This will mix the EDTA into the blood and prevent clotting.
2. Keep the blood cool once it is drawn. Keep the tubes in a refrigerator if the tubes will not be shipped right away. Keeping blood cool will help prevent degradation.
3. Ship within 7 days. If you ship overnight, no ice pack is required.

What happens to the DNA?

At Gene Check we save the DNA from our customers’ samples so that it is available for additional tests. We advertise that we save DNA for 2 years, but, so far, we haven’t thrown any away.

If you originally tested a sheep for scrapie susceptibility and later want to do a spider gene test, a parentage test or any new test that Gene Check might offer, just give us a call and we can use the stored DNA - no need to send more blood.

By the way, we do not save the blood - it takes up too much room in our already-crowded freezers!

New Certificates

Gene Check is pleased to announce the introduction of a new certificate for reporting results. Many of our customers have requested that Gene Check provide a single animal certificate of a somewhat more “formal” nature than our current certificates. The new certificate is printed on heavy paper and contains the testing results for a single sheep along with the name and address of the owner. Customers may request the new certificates, continue with the old style certificates, which list many results on a single page, or may receive both.

If you need an individual certificate for a sheep we have tested previously, just give us a call.

Lowest Prices

Gene Check is also pleased to announce that our prices for codon 171 testing have once again been reduced. Our new price is only \$14 per animal - our lowest price ever! Both codon 171 and spider genotyping is now only \$27.

The complete price list is on the back of this newsletter.

B. Ovis Testing

Gene Check is now offering B. ovis testing in our continuing effort to offer sheep producers (and veterinarians) a single laboratory for all sheep genetic and diagnostic testing.

Blood for B. ovis tests should be submitted in red capped tubes.

The cost of B. ovis testing is \$5.00 per sample.

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