GENICS

DeepDive

Next level histopathology diagnostics

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Histopathology diagnostics is a specialty service that involves examining the tissue and cellular structure at a microscopic level to look for abnormal cell structures, cellular organization and foreign bodies.

Be Empowered with Your Data

We examine the tissue and cellular structure at a microscopic level to look for abnormal cell structures, cellular organization and foreign bodies.

Accredited Veterinary Pathologists perform detailed examinations looking for abnormalities and linking their observations to causative agents.

Our personnel each hold over 20 years of experience in histological analysis and diagnostics.

Mitigate disease risk and maximize your farm profits.

At Genics service laboratories, **accredited Veterinary Pathologists** perform detailed examinations looking for such abnormalities and linking their observations to causative agents in the original specimen or animal, and in the field. Our personnel each hold over 20 years of experience in histological analysis and diagnostics.

Importantly, histopathology empowers **advanced holistic disease investigation,** and when used in combination with MultiPath PCR testing or molecular science, delivers an unrivalled investigation service to our clients to pinpoint the true cause of production impacting disease events.

Such investigations further strengthen Genics customized health management programs, and implementation of **early warning systems for producers.** Ultimately, early pathogen detection through a well designed and implemented health management program will **mitigate disease risk** and maximize your farm profits.

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Davidsons Solution (DS)

When using DeepDive Histopathology you will need to use DS as the fixative. If you would like some more background information on this, we have a video on our DeepDive process here.

Step 1. Making DS

Ingredients you will need:

- Formalin (37-39% solution)
- Glacial acetic acid
- 95% Ethanol AR grade
- Distilled water

Equipment you will need:

- Safety glasses
- Gloves
- Lab-coat
- 1L Schott bottle or similar

Method:

Put 220 mL of formalin, 115 mL of glacial acetic acid, 330 mL of 95% ethanol and 335 mL of distilled water into labelled 1L bottle. Invert to mix and store at room temperature.

Step 2. Method for fixing shrimp where you want the head or the whole body in DS

Equipment you will need:

- Safety glasses
- Gloves
- Lab-coat
- Paper towel
- Sharp scissors or scalpel blade
- Needle
- Syringe
- DS
- Sample bottle/container

Method:

Before you begin, it's important to assess your goals. Determine if you are just keeping the head [cephalothorax] or whole shrimp. Please contact us at farmerhelp@genics.com if you require expert advice on what to sample.

The focus of fixation is to get as much DS into the shrimp tissue to preserve the tissues as quickly as possible, as it only takes seconds for the organs and tissues to start deteriorating.

In total 0.2 to 10 mL should be injected depending on the size of the shrimp. Typically this will be approximately 10% in equivalent DS volume: shrimp tissue size.

Wearing PPE [safety glasses, gloves and lab coat]:

1. Euthanize shrimp in ice slurry
2. Remove the tail off the shrimp using scissors or a sharp scalpel
3. Use a needle and syringe to inject the head with DS in the eye sockets and from the back of the head, ensuring the hepatopancreas receives a substantial amount
4. Also inject DS into the mouth part area
5. Cut along the abdominal segments of the tail ensuring you do not cut too deeply into the underlying tissue
6. Use a needle and syringe to inject the tail all the way along in each segment
7. Place the shrimp into a labelled sample bottle/ container and cover sample with DS
8. Store sample at room temperature for 24 hours (small tissue sections) to 48 hours (large adult shrimp tissue sections)
9. After 24 or 48 hours depending on tissue size, transfer to 70% laboratory grade ethanol where tissue can be stored indefinitely

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Expert Tip – If your shrimp have visual physical characteristics or clinical signs that you want looked at through DeepDive, we suggest taking a photo of your shrimp alongside a ruler before starting and indicate where the location(s) of interest are specifically.

Step 3. Shipment to Genics Services Laboratories

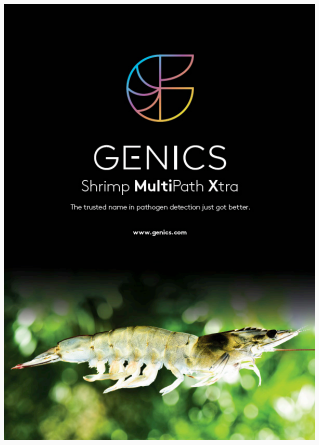
Remove your sample from the ethanol and wrap in paper towel that has been saturated with 70% ethanol. Place sample in a zip lock bag, and then in a second zip lock bag with a piece of dry paper towel (double packed).

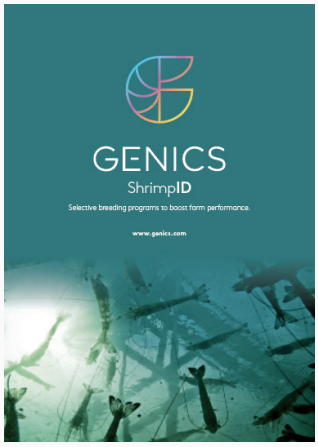
The next step is to complete and submit your sample information and paperwork by email – we have an easy to follow form here.

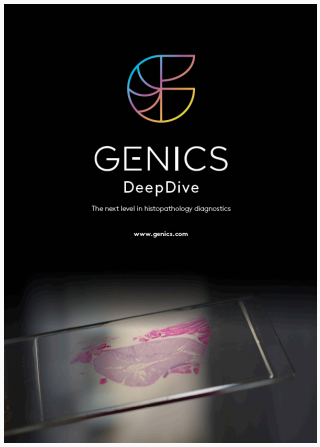
Once you've completed and emailed the paperwork, you'll need to ship the tissue samples to our ISO17025 certified Genics service laboratories. You can do this via your preferred courier (e.g. DHL, FedEx etc). We're here to help every step of the way. Contact us at farmerhelp@genics.com or +61 1300 895 515 with any queries you may have.

Genics Solutions Suite

To learn more about our other solutions click on a brochure below.







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Shipping

To ship samples you can either ship in 70% ethanol or you can wrap in very moist paper towel with 70% ethanol, place in sealed plastic bag and ship. Shipping documentation can be found here https://www.genics.com.au/submitsamples/ Please also email your shipping documents to labs@genics.com and specify your requirements for histopathology.