



Welcome Dr Kathryn Jenkins

Additional American (ACVP) Boarded Clinical Pathologist

We are excited to have Dr Kathryn Jenkins join us as an additional member of the Tasmanian Medical Laboratories Vetnostics pathologist team.

After moving to New Zealand from the UK with her Airforce family, Kathryn completed her BVSc at Massey University in 2002. Following a few years in practice and two children later, Kathryn then completed a residency in clinical pathology at Massey in 2011, where she undertook a Masters Research project on feline haemoplasmas. The family moved to Townsville for the next three years, where Kathryn was a lecturer in veterinary pathology at James Cook University. Whilst there, she achieved Membership of the Australian and New Zealand College of Veterinary Scientists in veterinary pathology. A move to the University of Melbourne followed in 2014, as a diagnostic pathologist and lecturer in clinical pathology, cementing Kathryn's passion for this exciting field. Kathryn joined Tasmanian Medical Laboratories Vetnostics in September 2017.

Kathryn enjoys all aspects of pathology, particularly clinical pathology and she has a particular interest in exotic species, haematology and cytology. Kathryn achieved board certification in clinical pathology with the ACVP in 2017.



Further Expansion of Molecular Testing Available at Vetnostics

We are very pleased to announce further expansion of the molecular testing armoury offered by Tasmanian Medical Laboratories Vetnostics. These panels are available immediately. Molecular diagnostics is a rapidly advancing field. PCR based tests are sensitive and specific and we plan to have more tests coming online in the future.

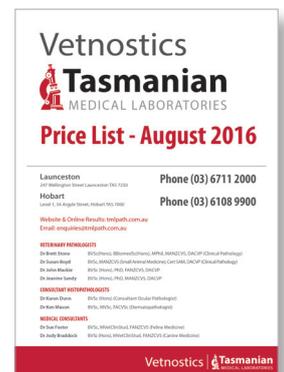
Test Name and Panel Inclusions	Test/Panel Code	Price (ex. GST)
Neurological PCR Canine Cryptococcus sp., Toxoplasma gondii, Distemper virus, Neospora caninum, Angiostrongylus sp.	CNP	\$90.00
Neurological PCR Feline Cryptococcus sp., Toxoplasma gondii, Coronavirus	FNP	\$90.00
Equine Breeding Panel PCR Pseudomonas aeruginosa, Klebsiella pneumoniae capsule types 1, 2 & 5	EBP	\$60.00

Do You Have Your Vetnostics Pricelist?

Ensure you know where your Tasmanian Medical Laboratories Vetnostics pricelist is located. The pricelist contains information that may readily answer queries without the need for contacting the laboratory further including, that pertaining to;

- Test pricing
- Result turnaround times
- Panel codes
- Required specimen tubes/containers
- Specific tests included in our blood and PCR profiles

If you require a hard or electronic copy of our current pricelist, please contact Tasmanian Medical Laboratories Vetnostics via email (enquiries@tmlpath.com.au) or phone Launceston on **(03) 6711 2000** or Hobart on **(03) 6108 9900**.





What are These “New” Bacteria?

Microbiology technology has changed dramatically in the past decade and the accuracy of bacterial isolate identification has subsequently increased. Bacterial isolation by inoculation of the sample on culture media plates remains a fundamental laboratory technique. Traditionally, microorganisms have been identified from culture plates by colony morphology and microscopic and biochemical characteristics. This method of identification is still the primary technique used and is essential for production of pure cultures for other identification methods. Two newer state-of-the-art techniques utilised by Tasmanian Medical Laboratories Vetnostics for accurate and rapid microbial identification are VITEK® and MALDI-TOF systems. The VITEK® is an automated testing system for bacteria and some yeasts. The cultured microorganism is loaded onto a reagent card with wells containing substrates for various biochemical tests. The results from these tests are then compared to a large database to identify the microorganism cultured.

A probability level is given for each species identified, allowing the microbiologist to critically assess the accuracy of the results before reporting. The VITEK® may also be used to determine minimum inhibitory concentrations (MICs) of some antibiotics.

MALDI-TOF is an acronym describing an identification technique using mass spectrometry. The sample is ionized to release a cloud of proteins which are then accelerated with an electric charge. The “time of flight” (or-TOF) of these components is determined, whereby the spectrum of proteins detected is compared to a database to identify the microorganism. Utilisation of these new technologies has resulted in greater accuracy and consistency of bacterial identification, including organisms that were previously only identified to the genus level. The additional information will assist in developing a greater understanding of normal microflora and potential pathogens.

Please contact the laboratory to speak with a pathologist if you have any questions regarding microbiology results.

Adapted from Vetpath, October 2016 Newsletter.

Intrinsic Antibiotic Resistance

Appropriate antibiotic selection is important in the treatment of bacterial infections. Knowledge regarding antibiotic resistance in certain organisms can be helpful in making the right therapeutic choice.

There are two types of bacterial resistance to antibiotics, acquired and intrinsic resistance. Acquired resistance arises through mutation or exchange of genetic material between bacteria. Intrinsic resistance is a natural insensitivity in bacteria that have never been susceptible to a particular antibiotic. All (or almost all) members of a particular bacterial genus or species will exhibit the same intrinsic (innate) resistance, which can be predicted from an organism’s identity. For example, *Pseudomonas aeruginosa* is intrinsically resistant to many classes of antibiotics due to a low number of porins in its outer membrane, which means that many antibiotics cannot penetrate to the interior of the bacterial cell.

Some common examples of intrinsic resistance are shown in the adjacent table (based on Antimicrobial Therapy in Veterinary Medicine 4th edition, 2006. Giguere S, Prescott JF et al):

Knowledge of the intrinsic resistance of a bacterial isolate can be important in practice to choose the best first line antibiotic as well as avoid inappropriate therapy.

Tasmanian Medical Laboratories Vetnostics does not test bacterial isolates against antibiotics to which they are intrinsically resistant, but indicates these resistances in the reports.

	Gram positive		Gram negative				
	<i>Streptococcus</i> sp	<i>Enterococcus</i> sp	<i>Klebsiella</i> sp	<i>Enterobacter</i> sp, <i>Citrobacter</i> sp, <i>Morganella</i>	<i>Serratia marcescens</i>	<i>Proteus vulgaris</i> , <i>Proteus penneri</i>	<i>Pseudomonas aeruginosa</i>
Ampicillin/amoxycillin			●	●	●	●	●
Amoxicillin-clavulanic acid				●	●		●
Cephalosporins (1st generation)		●		●	●	●	●
Cephalosporins (2nd, 3rd generation)		●					● ^a
Tetracycline/Doxycycline						●	●
Trimethoprim-sulfamethoxazole		●					●
Macrolides (e.g. erythromycin)			●	●	●	●	●
Lincosamides (e.g. clindamycin)		●	●	●	●	●	●
Aminoglycosides^b	● ^c	● ^c					
Chloramphenicol (and florfenicol)							●
Polymyxin B	●	●			●	●	

a includes resistance to cefovecin (Convenia®). Exceptions include ceftazidime.

b e.g. gentamicin, neomycin, framycetin.

c resistant to low dose aminoglycoside therapy.

