

The Veterinary Diagnostic Laboratory (VDL) has been established as a part of the Animal Health Service Center, Faculty of Veterinary Medicine, Chiang Mai University since 1999. The VDL provides many laboratory testing and diagnostic services in all types of animals, including aquatic medicine. The aims of our laboratory services are training the veterinary students, supporting a veterinarians, researchers, or faculty for research study and diagnosis. The tests of our laboratory are as follows:

1. Pathology
2. Serology
3. Microbiology
4. Molecular biology laboratory
5. Virology
6. Parasitology
7. Aquatic medicine
8. Feed analysis
9. Milk analysis
10. Sperm evaluation

Contact us:

Veterinary diagnostic laboratory, Animal Health Service Center
Faculty of Veterinary Medicine, Chiang Mai University,
Canal road, Mae Hia, Muang, Chiang Mai, Thailand 50100
Tel.+6653-948041-42 Fax.+6653- 948041

E-mail: [vet_diag@cmu.ac.th](mailto:veter_diag@cmu.ac.th)

Website: http://www.vet.cmu.ac.th/VET_lang=en/VDL.php

Facebook: <http://th-th.facebook.com/VDL.CMU>

Line ID: Vet_diag

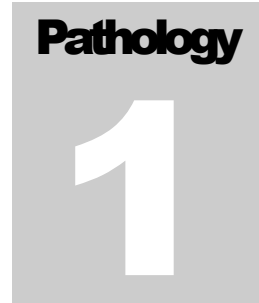
Business hours:

Monday–Friday Time 8:30 a.m. – 4:30 p.m.

Laboratory report:

The results can be reported by telephone, fax, regular mail,
E-mail, or LINE application

September 2016



Equipment needed:

1. Plastic container, zip-lock bag or bottle
2. 10 % Formalin (Formalin1:9 water)
3. Clean plastic bag or zip-lock bag
4. Ice or Ice pack
5. Foam box or cooling box

Sample preparation for necropsy:

1. *Live animals* should be sent to laboratory immediately
2. *Carcass*: Large animals should be sent to laboratory immediately. Small animals should send to laboratory immediately or kept in plastic bag/zip-lock bag, preserved in the cooling box that maintain with ice or ice pack and sent to laboratory within 1 day.

Remark: For pigs and birds: should send 2-3 pigs or 3-5 birds that presented in the same clinical sign or syndrome.

Tissue samples for histopathology:

1. Biopsy with less than 0.5 cm thickness is preferred.
2. Place the sample in 10% formalin in a plastic container.
3. Label the sample containers as follows:
 - a. Patient name / ID number
 - b. Specimen type(s) and date collection

VETERINARY DIAGNOSTIC LABORATORY CMU.

Pathology

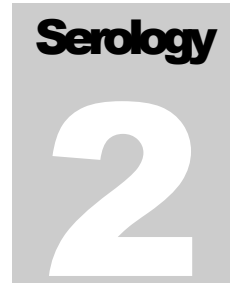
Laboratory section	Method	Sample	Turnaround time**	Fee (Baht)
Necropsy	Necropsy	Live animal /carcass	1*	500 (Dog,Cat) 600 (Bird) 1,000 (Pig)
Histopathology	Histopathology	Formalin fixed tissue	5	300
Stained slide	Routine H&E	Formalin fixed tissue	4	150
Cytology	Cytology	Aspiration/ slide (smear)	1	200
Special stain	-	Formalin fixed tissue	***	***
Immunohisto-chemistry (IHC)	-	Formalin fixed tissue	***	***

* Tentative diagnostic report within 1 day, **Working day, ***Contact the laboratory

Laboratory section	Method	Sample	Fee (Baht)
Incineration	Normal incineration	Carcass (< 10kg)	400
		Carcass (> 10 kg)	40 Baht/Kg
	with bone/ash	Carcass	200**
	with cremation	Carcass	2,000**
Museum box	***	Formalin fixed tissue	50 baht per inch ²
Stuff	Stuff technique	Carcass	Start at 2,500

** For bone/ash collection or cremation: a fee will charge up with normal incineration

*** Contact laboratory



Equipment needed:

1. Sterile needle and syringe
2. Vacutainer tube
3. Clean plastic bag or zip-lock bag
4. Ice or Ice pack
5. Foam box or cooling box

Blood collection technique:

1. Using an appropriate syringe and needle

Species	Syringe (mL.)	Needle number	Amount of blood (mL.)
Dog,cat	3	21-23	1
Pig	5-10	18	5
Horse	5-10	18	5
Cow	5-10	18	5
Avian	3	22-23	1

2. Carefully fill the blood in the appropriate vacutainer tube
3. Label the sample containers as follows:
 - a. Patient name / ID number
 - b. Specimen type(s)
 - c. Date collection
4. The blood sample should keep in a plastic bag (leak-proof), preserve in a cooling box that maintain in 4°C temperature then sent to laboratory within 1 day

Specimens:

1. At least 3 ml. of clotted blood is recommended
2. 0.5-1 ml. of serum for each test is needed

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Serology

Diagnosis tests	Method	Fee (Baht)	Turnaround time**
Pig			
- Pseudorabies (Aujeszky's disease: AD)	ELISA	100	3
- PRRSV	ELISA	220	3
>20 samples		250	
<20 samples			
- Classical swine fever	NPLA	150	5
Avian			
- Newcastle disease (ND)	HI	50	3
- Infectious bursal disease (IBD/Gumboro)	ELISA	50	3
- Infectious bronchitis (IB)	ELISA	50	3
- <i>Mycoplasma gallisepticum</i> (MG)	ELISA	50	3
	RPT	60	3
Horse			
- Equine infectious anemia (EIA)	AGID	400	3
Cow			
- Brucellosis (<i>B.abortus</i> , <i>B.suis</i> , <i>B.melitensis</i>)	Agglutination test	50	3

** Working day

Bacteriology

3

Sample types:

Swab sample in a transport media, water, feed, milk, feces, or tissues

Equipment needed:

1. Clean or sterile plastic bag
2. Transport media, sterile bottle or tube
3. Foam box or cooling box
4. Ice or ice pack

Sample collection techniques:

1. Swab lesion area and keep in the transport media
2. (OR) Keep the lesion organ, size more than 5 cm. thickness in the clean or sterile plastic bag
3. Label sample containers as follows:
 - a. Patient name / ID number
 - b. Specimen type(s)
 - c. Date collection
4. The sample should keep in a plastic bag (leak-proof), preserve in a cooling box that maintain in 4°C temperature then sent to laboratory within 1 day

Notes for bacteriology submitted sample:

1. The sample must be collected aseptically, avoid from contamination that may lead to faulty laboratory result.
2. The sample should be collected immediately after the onset of clinical signs and sent to the diagnostic laboratory as soon as possible.
3. The sample should be labeled and sent together with complete submitted form. A sufficient clinical information and/or specific laboratory requirement should be noted with the submitted sample.
4. The laboratory will reject all of the improper samples.
5. Recommend transport media are as follows:
 - a. For general bacterial identification: Stuart transport media
 - b. For fecal samples: Cary-Blair media

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Microbiology

Laboratory tests	Method	Fee (Baht)	Turnaround time**
1. Bacterial identification	Conventional	200	5
2. Drug sensitivity test	Disk diffusion	200	5
3. Total bacterial count	Standard plate count	250	3
4. Coliform bacteria and <i>E.coli</i> (MPN)	MPN	400	5
5. <i>Salmonella spp.</i>	Identification	350	7
6. <i>Salmonella spp.</i> (Serogroup)	Identification, serogroup	500	7
7. Coagulase positive Staphylococci	Identification	1,200	5
8. Total coliform count	Standard plate count	250	3
9. Total fungi count	Standard plate count	250	7
10. TB culture	Conventional	600	2 months

** Working day

Sample collection techniques:

1. The sample should be collected immediately after the onset of clinical signs and sent to the diagnostic laboratory as soon as possible.
2. Label sample containers as follows:
 - a. Patient name / ID number
 - b. Specimen type(s)
 - c. Date collection
3. The sample should keep in a plastic bag (leak-proof) or zip-lock bag, preserve in a cooling box that maintain in 4°C temperature then sent to laboratory within 1 day
4. (OR) keep the sample in -20°C (freeze) and sent within 1 week.

Molecular biology

Molecular biology test	Specimen	Method	Fee(Baht)	Turnaround time**
Dog				
- Canine distemper (CDV)	Blood, CSF	RT-PCR	1,000	3
- Canine parvovirus (CPV)	Intestines/feces	PCR	700	3
- <i>Ehrlichia canis (E.canis)</i>	Serum	PCR	700	3
- <i>Trypanosoma cruzi</i>	Blood	PCR	700	3
Cat				
- Feline infectious peritonitis (FIP)	Blood/cavity fluids	RT-PCR	1,000	3
- Feline leukemia (FeLV)	Blood/lymph node/spleen	RT-PCR	1,000	3
- Feline immunodeficiency (FIV)	Blood	RT-PCR	1,000	3
- Feline panleukopenia	Intestines/feces	PCR	700	3
- <i>Hemotropic mycoplasma (Haemobartonella spp.)</i>	Blood	PCR	700	3
Ruminant				
- Hemorrhagic septicemia	Tonsil	PCR	700	3
- Melioidosis	Lesion organs	PCR	700	3
- Bovine leukosis	Blood	RT-PCR	1,000	3
Pig				
- PRRSV strains (US, EU)	Serum/lung/lymphnode	RT-PCR	1,000	3
- HP-PRRSV		RT-PCR	1,000	3
- Porcine circovirus(PCV-2)	Serum	PCR	700	3
- Swine fever	Serum	RT-PCR	1,000	3
- Porcine epidemic diarrhea (PED)	Intestine/feces	RT-PCR	1,000	3

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- Transmissible gastroenteritis (TGE)	Intestine/feces	RT-PCR	1,000	3
- Swine influenza	Blood/lung	RT-PCR	1,000	3
- <i>Streptococcus suis</i>	Meat	PCR	700	3
Poultry				
- Avian Influenza	Blood/lung	RT-PCR	1,000	3
- Newcastle disease (ND)	Blood/lung/ cloacal swab	RT-PCR	1,000	3
-Infectious bronchitis (IB)	Tracheal/lung/ki dney	RT-PCR	1,000	3
-Infectious bursal disease (IBD/Gumboro)	Bursa of fabricius	RT-PCR	1,000	3
- <i>Mycoplasma gallisepticum</i> (MG)	Choanal swab	PCR	700	3
ETC.				
-Bird sexing	Whole blood/ feather	PCR	650	3
- <i>Trypanosoma evansi</i>	Whole blood	PCR	700	3
-Koi Herpes virus	Gill	PCR	700	3
-Leptospirosis	Urine/blood	PCR	700	3
- Tuberculosis	Lung	PCR	700	3
- EEHV	Whole blood	PCR	700	3

** Working day



Sample collection techniques:

1. The sample should be collected immediately after the onset of clinical signs and sent to the diagnostic laboratory as soon as possible.
2. Label sample containers as follows:
 - a. Patient name / Patient ID number
 - b. Specimen type(s)
 - c. Date collection
3. The sample should keep in a plastic bag (leak-proof) or zip-lock bag, preserve in a cooling box that maintain in 4°C temperature then sent to laboratory within 1 day
4. (OR) keep the sample in -20°C (freeze) and sent within 1 week.

Virology

Virology test	Specimen	Fee (Baht)	Turnaround time**
- Viral isolation	Tissues/serum	1,500	7

** Working day



Equipment needed:

1. Clean plastic bag or zip-lock bag
2. Foam box or cooling box
3. Ice or ice pack

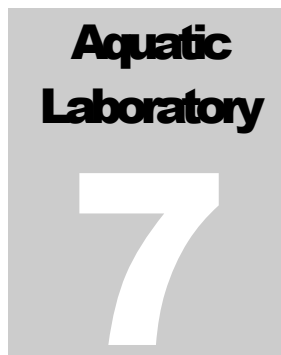
Sample collection techniques:

1. 25 mg. of feces is required for examination.
2. Testing *Sarcocytic* spp. is required 100 g of diaphragm and heart.
3. Testing *Trichinella* spp. is required 100 g of diaphragm.
4. Label sample containers as follows:
 - a. Patient name / ID number
 - b. Specimen type(s) and date collection
5. The sample should keep in a plastic bag (leak-proof) or zip-lock bag, preserve in a cooling box that maintain in 4°C temperature then sent to laboratory within 1 day

Parasitology

Parasitology test	Method	Fee (Baht)	Turnaround time**
- Blood parasite	Stained blood smear	100	3
- Parasite in feces	Floatation & sedimentation	100	3
- <i>Sarcocytic</i> spp.	Digestion method	100	5
- <i>Trichinella</i> spp.			

** Working day



Aquatic laboratorycomposes of:

1. Aquatic medicine
2. Aquatic chemical laboratory test

Aquatic chemical laboratory test

Chemical test lists	Method	Fee (Baht)	Turnaround time**
- pH	Automated	70	1
- Total hardness	Titration method	150	1
- Total salinity	Titration method	100	1
- Total CO ₂	Titration method	150	2
- Total acidity	Titration method	150	2
- Total alkalinity	Titration method	150	2
- Total ammonia	Phenate method	140	1
- Nitrite	Colorimetric method	160	2
- Chlorine	Automated	120	1
- DO	Automated	100	1
- Package (complete test)	-	500	2

** Working day

Feed analysis

8

Sample collection techniques:

1. Raw materials

- a. For sample from gunnysack, randomly collect from 5 places for amount of 500 g. and keep in the plastic bag.
- b. For sample from stack, randomly collect from 5 places in width and 3 places with 1 meter in depth for amount 500 g. Mixed together then keep in the plastic bag or zip-lock bag.

2. Feed

Randomly mixed amount of 2 % feed, and collected 500 g. of mixed feed in the plastic bag or zip-lock bag.

Feed analysis	Method	Fee (Baht)	Turnaround time**
- Fiber	AOAC method	400	5
- Fat	AOAC method	300	3
- Protein	Kjeldahl method	500	3
- Energy	AOAC method	300	3
- Dry	NFTA method	150	3
- Ash	AOAC method	300	3

** Working day



Sample collection techniques:

For Somatic cell count test (SCC)

1. Label sample containers as follows:
 - a. ID number
 - b. Specimen type(s)
 - c. Date collection

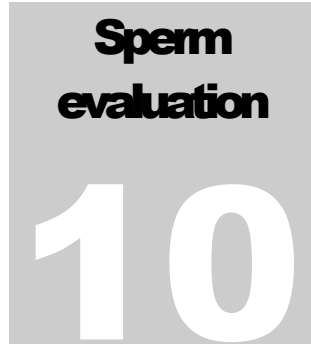
2. The milk sample should be collected at least 40 ml. each in the clean plastic bottles, preserve in a cooling box that maintain in 4°C temperature then sent to laboratory within 24 hr.

Milk analysis

Milk analysis	Method	Fee (Baht)	Turnaround time**
- Somatic cell count (SCC)	Automated	20	1
- Milk components	Automated	20	1
- Somatic cell count & Milk component	Automated	40	1

** Working day

Remark: Please contact the laboratory 2 days before submit the sample



Sperm evaluation test	Method	Fee (Baht)	Turnaround time**
Absolute sperm count	Sperm evaluation	60	3

** Working day