

1. DESCRIPTION

Bovine leukosis is caused by Bovine Leukemia Virus (BLV), an oncogenic retrovirus which belongs to the Retroviridae family. This disease is widely distributed and endemic in many cattle herds, dairy cows are more commonly affected with enzootic bovine leukosis than beef cattle.

Most cattle infected with BLV do not exhibit clinical signs. BLV infection is life-long in cattle so demonstration of serum antibodies to BLV indicates persistent infection. Persistent (or fluctuating) lymphocytosis develops in approximately 30% of BLV-infected cattle. Lymphoma (lymphosarcoma) develops in approximately 3% of BLV-infected cattle but usually not until they are at least six years-of-age, this form of lymphoma is termed the “enzootic”, “endemic”, or “adult” form of bovine leukosis. Clinical signs reflect organ involvement peripheral lymph nodes can be visually or palpably enlarged. When retrobulbar lymph nodes are enlarged, proptosis or exophthalmos can result. Cardiac involvement usually includes the right atrium and can result in congestive heart failure with subcutaneous, ventral-dependent edema. Poor reproductive performance and palpable enlargement of the uterine wall or intra-pelvic lymph nodes are also indicators of malignant lymphoma.

VetPCR™ BLV Detection Kit is the direct detection of *bovine leukemia virus* on the basis of a genetic database, so it can diagnose very fast and accurately. It can amplify only specific gene using the PCR (Polymerase Chain Reaction) method, and take only 3 hours for detection. Therefore, it is a very fast, accurate, reliable technique.

2. STORAGE

The components of VetPCR™ BLV Detection Kit should be stored at -20°C. Under this condition, the kit is stable until expiration date stated on the label.

3. CONTENTS

	Kit 48	Kit 96	
VetPCR™ BLV PCR Pre-mixture	48	96	tubes
DNase/RNase-free water	1	1	vial
BLV PCR Positive control	1	1	vial
BLV PCR Positive control Pre-mixture	4	8	tubes
Brig™ Molecular Weight marker	1	1	vial
Mineral Oil	1	1	vial
DNA purification kit (see step 6.1)	50	100	tests

4. SPECIMEN

0.5 ml whole blood in EDTA (purple top) tube, or egg (albumen), thymus or spleen.

5. ADDITIONAL REQUIRED MATERIALS

- Disposable gloves
- Pipettes
- Sterile pipette tip
- Vortex mixer
- Centrifuge for microcentrifuge tubes
- Thermal cycler
- Electrophoresis kit
- UV transilluminator

6. PROCEDURE

Please read through the entire procedure before starting.

6.1 DNA PREPARATION

Various manufacturers offer DNA isolation kits. Please carry out the DNA isolation according to the manufacturers instructions. The following standard DNA Purification kit is recommended.

Product	Catalog No.	Manufacturer
Bioingentech™ Genomic DNA Purification Kit (50 test)	230040(50)	Bioingentech Biotechnology Inc.
Bioingentech™ Genomic DNA Purification Kit (100 test)	230040(100)	Bioingentech Biotechnology Inc.

6.2 AMPLIFICATION

- 1.- Prepare appropriate PCR Premix tubes and one PCR Premix tube for Positive control. Label.
- 2.- Add 6µl of DNase/RNase-free water into the PCR Premix tube to total volume as 11µl.
- 3.- Add 2µl of template DNA into the PCR Premix tube to total volume as 13µl.
- 4.- Add 6µl of DNase/RNase-free water and 2µl of PCR Positive control into a PCR Positive control Premix tube for monitoring of amplification and easy interpretation.
- 5.- Add mineral oil (11µl). This step is necessary, even when using a thermal cycler that employs a top heating method.
- 6.- Perform PCR reaction of samples as the below process, using a PCR thermal cycler.

PCR cycle		Temp.	Time
1 Cycle	Initial Denaturation	94°C	2 min.
	Denaturation	94°C	30 sec.
	Annealing	55.5°C	30 sec.
30 Cycles	Extension	72°C	30 sec.
	Final extension	72°C	5 min.

6.3 DETECTION OF AMPLIFIED PRODUCTS

- 1.- Prepare 1.5% agarose gel containing Ethidium bromide (Et-Br).
- 2.- Load 7µl of PCR product, 7µl of positive control and 2µl of Brig™ Molecular Weight marker on agarose gel without adding a loading-dye buffer and perform electrophoresis.
- 3.- Run electrophoresis by 100V (required about 30~40 minutes).
- 4.- Identify the result on ultra-violet (UV) transilluminator.

6.4 INTERPRETATION

- Expected PCR product size : 655 bp

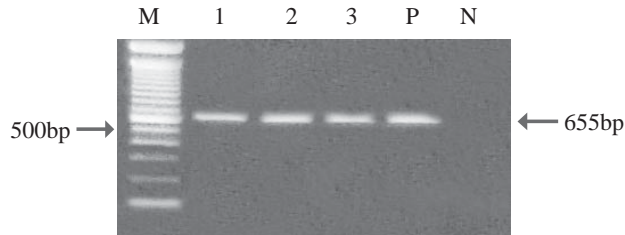


Fig1. Electrophoresis of PCR product by VetPCR™ BLV Detection Kit
Lane M : Brig™ Molecular Weight Marker (Bioingentech Ltd.)
Lane 1~3 : BLV Positive sample
Lane P : Positive control
Lane N : Negative control

7. NOTICE

- For research purpose only. Not for use in diagnostic procedures for clinical purposes. *For in Vitro Use Only.*
- Take care in handling of specimen to minimize risk of infection.
- The PCR process is covered by patents issued and applicable in certain countries. Bioingentech Biotechnology Inc. does not encourage or support the unauthorized or unlicensed use of the PCR process. Use of this product is recommended for persons that either have a license to perform PCR or are not required to obtain a license.

8. TROUBLE SHOOTING

- 1.- In the case of difficult to interpret results due to non-specific bands; reduce amount of template by 1/10 dilution, heated at 65° C for 5 min. and reacts again.
- 2.- Preparation of PCR reaction at room temperature may cause the non-specific band.
- 3.- All procedure should be carried out on ice.

9. ORDERING INFORMATION

Product	Catalog No.
VetPCR™ BLV Detection Kit 48	VET0006B(48)
VetPCR™ BLV Detection Kit 96	VET0006B(96)
Brig™ Molecular Weight Marker	24012



Bioingentech Ltd.

Salas 350, piso 2, Concepción, Chile
Telephone (56)-(41)-2790435
Fax (56)-(41)-2790435
info@bioingentech.com
www.bioingentech.com

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