

**DETEKSI DAN IDENTIFIKASI
VARIANCE SURFACE GLYCOPROTEIN (VSG)
Trypanosoma evansi ISOLAT LOKAL**

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Intisari

Trypanosomiasis (Surra) merupakan salah satu penyakit endemik di Indonesia. Surra yang disebabkan oleh protozoa *Trypanosoma evansi* merupakan salah satu penyakit hewan menular (PHM) penting pada ternak kuda, sapi dan kerbau. Penyebaran *Trypanosoma evansi* hampir di seluruh pulau besar di Indonesia dan dapat menyerang berbagai jenis hewan ternak serta satwa liar, dan menimbulkan kerugian ekonomi seperti penurunan produksi daging dan susu, reproduksi, pertumbuhan terhambat dan kematian. Metode deteksi *Trypanosoma evansi* secara konvensional sangat terbatas karena tingkat parasitemia yang rendah, oleh karena itu metode molekuler dengan sensitifitas yang tinggi dikembangkan untuk menggantikan atau memperkuat diagnosis. Tujuan penelitian adalah mendeteksi *Trypanosoma evansi* pada ternak lokal dengan metode *Wet Blood Film* (WBF), pengecatan apus darah tipis, *Haematocrit Centrifugation Technique* (HCT), inokulasi pada mencit dan *Card Agglutination Test* (CATT), mendeteksi secara molekuler *Variance Surface Glycoprotein* (VSG) *Trypanosoma evansi* isolat lokal Indonesia, dan mengetahui variasi VSG *Trypanosoma evansi* dari isolat lokal Sumatera dan Jawa. Sampel yang digunakan dalam penelitian ini yaitu *Trypanosoma evansi* isolat lokal dari Brebes dan Aceh. Hasil dari pemeriksaan sampel darah dengan menggunakan beberapa metode konvensional dianalisis secara deskriptif dan data sekuen nukleotida *Trypanosoma evansi* diolah menggunakan Mega 6. Hasil pemeriksaan sampel darah dengan metode *Wet Blood Film*, pengecatan apus darah tipis, *Haematocrit Centrifugation Technique*, inokulasi pada mencit, *Card Agglutination Test* dan *Polymerase Chain Reaction* (PCR) dengan primer ILO7957 dan ILO8091 positif *Trypanosoma evansi*. Hasil sekuen VSG pada isolat Aceh dan Brebes menunjukkan *Trypanosoma evansi* (100%) menggunakan metode BLAST. Tidak ada perbedaan urutan basa nukleotida antara *Trypanosoma evansi* dari wilayah Aceh dengan *Trypanosoma evansi* dari wilayah Brebes.

Kata kunci : Surra, *Trypanosoma evansi*, *Variance Surface Glycoprotein* (VSG)

**DETECTION AND IDENTIFICATION OF
VARIANCE SURFACE GLYCOPROTEIN (VSG) IN
LOCAL ISOLATES OF *Trypanosoma evansi***

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Abstract

Trypanosomiasis (Surra) is one of endemic disease in Indonesia. Surra is a disease caused by the protozoa called *Trypanosoma evansi* which is one of contagious animal diseases in horses, cattle and buffalo. *Trypanosoma evansi* has the widest geographical distribution in Indonesia and could attack various types of livestock as well as wildlife, and this disease can cause great economic losses each year as decrease in meat and milk production, decrease of reproductive ability, growth retardation and death. The detection method of *Trypanosoma evansi* conventionally is very limited due to the low levels of parasitaemia, therefore the molecular methods with high sensitivity developed to replace or confirm the diagnosis. The main goal's of this study were to detect *Trypanosoma evansi* on local livestock with Wet Blood Film (WBF) method, stained thin blood smears, Hematocrit Centrifugation Technique (HCT), inoculation in mice and Card Agglutination Test (CATT), detection of molecular Variance Surface Glycoprotein (VSG) *Trypanosoma evansi* Indonesia local isolates, and knowing variation of VSG *Trypanosoma evansi* of Sumatra and Java local isolates. The sample used in this study were *Trypanosoma evansi* from Brebes and Aceh. Results of the examination of blood samples using several conventional methods were analyzed descriptively and *Trypanosoma evansi* nucleotide sequence data were analyzed with Mega 6 software. Results of the examination of blood samples using Wet Blood Film, stained thin blood smears, Hematocrit Centrifugation Technique, inoculation in mice, Card Agglutination Test and Polymerase Chain Reaction using primer ILO7957 and ILO8091 were found the blood parasite *Trypanosoma evansi*. Result of the sequence VSG *Trypanosoma evansi* of Aceh and Brebes isolates showed *Trypanosoma evansi* (100%) using BLAST method. There was no difference in the nucleotide sequences between *Trypanosoma evansi* of Indonesia local isolate from Aceh with *Trypanosoma evansi* of Indonesia local isolate from Brebes.

Keywords: Surra, *Trypanosoma evansi*, Variance Surface Glycoprotein (VSG)