

## DIFFERENCE IN ASPARTATE AMINOTRANSFERASE ENZYME ACTIVITY WITH RAPID SERUM TUBE (RST) AND SERUM SEPARATOR TUBE (SST) IN DIABETES MELLITUS PATIENTS

Azizah Nur Isnaini<sup>1</sup>, M. Atik Martsiningsih<sup>2</sup>, Dhika Juliana Sukmana<sup>3</sup>  
<sup>1,2,3</sup>Jurusan Teknologi Laboratorium Medis Poltekkes Kemenkes Yogyakarta  
Jl. Ngadinegaran MJ No.62 Mantrijeron, Mantrijeron, Yogyakarta  
email: [azizahisnaini363@gmail.com](mailto:azizahisnaini363@gmail.com)

### ABSTRACT

**Background:** Aspartate Aminotransferase (AST) enzyme activity is one of the indicators used in health examinations for patients with diabetes mellitus. Factors affecting the accuracy of the examination include the choice of tube. The type of tube commonly used is the Serum Separator Tube (SST). The Rapid Serum Tube (RST) has a clotting time of 3–5 minutes. The clotting process plays a crucial role in maintaining the accuracy of results, minimizing pre-analytical errors, and reducing Turnaround Time (TAT).

**Objective:** To determine the differences in Aspartate Aminotransferase enzyme activity in diabetes mellitus patients using SST and RST.

**Method:** A pre-experimental study with a static group comparison design. The study was conducted in April 2025. Data from 30 samples using SST and RST were analyzed. An Independent-Sample T Test was used for data analysis.

**Results:** The average Aspartate Aminotransferase enzyme activity in SST was 23.2 U/L and 22.9 U/L in RST. There was no significant difference in Aspartate Aminotransferase (AST) enzyme activity between SST and RST ( $p=0.831$ ) using the Independent-Sample T Test.

**Conclusion:** There was no significant difference in Aspartate Aminotransferase enzyme activity between SST and RST.

**Keywords:** Aspartate Aminotransferase, Serum Separator Tube, Rapid Serum Tube, Diabetes Mellitus

# PERBEDAAN AKTIVITAS ENZIM *ASPARTATE AMINOTRANSFERASE* (AST) DENGAN *RAPID SERUM TUBE* (RST) DAN *SERUM SEPARATOR TUBE* (SST) PADA PENDERITA DIABETES MELITUS

Azizah Nur Isnaini<sup>1</sup>, M. Atik Martsiningsih<sup>2</sup>, Dhika Juliana Sukmana<sup>3</sup>  
<sup>1,2,3</sup>Jurusan Teknologi Laboratorium Medis Poltekkes Kemenkes Yogyakarta  
Jl. Ngadinegaran MJ No.62 Mantrijeron, Mantrijeron, Yogyakarta  
email: [azizahisnaini363@gmail.com](mailto:azizahisnaini363@gmail.com)

## ABSTRAK

**Latar Belakang:** Aktivitas enzim *Aspartate Aminotransferase* (AST) menjadi salah satu indikator pemeriksaan kesehatan pasien diabetes melitus. Faktor yang mempengaruhi keakuratan pemeriksaan yaitu pemilihan tabung. Jenis tabung yang sering digunakan *Serum Separator Tube* (SST). *Rapid Serum Tube* (RST) memiliki waktu pembekuan 3-5 menit. Proses pembekuan berperan penting dalam menjaga akurasi hasil, meminimalkan kesalahan praanalitik dan mempersingkat *Turn Around Time* (TAT).

**Tujuan:** Mengetahui perbedaan aktivitas enzim *Aspartate Aminotransferase* penderita diabetes melitus pada SST dan RST

**Metode:** Penelitian *pra-eksperimen* dengan desain *static group comparison*. Penelitian dilaksanakan bulan April 2025. Data sebanyak 30 sampel dengan SST dan RST. *Independent-Sample T Test* digunakan dalam analisis data.

**Hasil:** Rata-rata aktivitas enzim *Aspartate Aminotransferase* pada SST sebesar 23,2 U/L dan RST sebesar 22,9 U/L. Tidak terdapat perbedaan yang signifikan pada aktivitas enzim *Aspartate Aminotransferase* (AST) pada SST dan RST ( $p=0.831$ ) dengan Uji *Independent-Sample T Test*.

**Kesimpulan :** Aktivitas enzim *Aspartate Aminotransferase* pada SST dan RST tidak ada perbedaan

**Kata Kunci :** *Aspartate Aminotransferase*, *Serum Separator Tube*, *Rapid Serum Tube*, Diabetes Melitus