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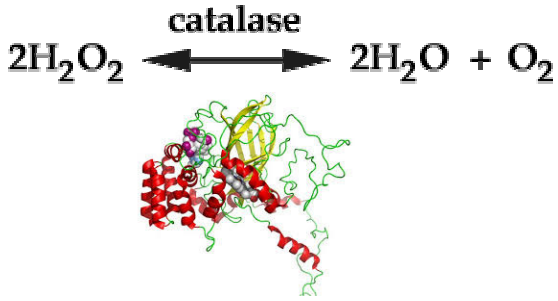
Catalase activity (CAT) Assay kit (48 Tests)

INTRODUCTION

Biocore Diagnostika CAT assay Kit provides a simple, reproducible, and standardized tool for assessment of Catalase activity in biological sample e.g. **plasma, serum, tissue homogenates, and cell lysates**. The CAT activity determine colorimetrically at 405nm.



Kit Contents:

1. Reagent 1: BCD-R1 (Contains optimized Buffer), 5ml. (CAT41)
2. Reagent 2: BCD-R2 (Contains H_2O_2 as substrate), 0.5ml, (CAT42)
3. Reagent 3: BCD-R3 (Chromogen powder), 250mg (CAT43)
4. Reagent 4: BCD-R4 (Clearing agent), 0.5mL (CAT44)

Assay Range:

Biocore CAT assay kit can be use for CAT activity determination in range of 1-100U/mL.

Assay Sensitivity:

Biocore CAT activity assay kit can determine CAT in biological samples with 0.5U/mL sensitivity (0.5KU/L). In this assay, CAT activity unit was considered as the amount of the sample that will catalyze decomposition of 1 µmole of H_2O_2 to water and O_2 in one minute.

Assay Precision:

Human serum sample with replication No.8 showed the intra and inter assay coefficient of variation 6.3% and 7.9% respectively.

Reagent preparation:

1) R1, R2 and R4 are ready to use reagents.
2) Preparation of R3 reagent: Add 5ml double distilled water to the Chromogen powder before use. Store at 4°C.

Assay Protocol:

1. All reagents and samples must be equilibrated to RT before test. Shake the unknown sample for homogenation well.
2. Add 10µL standards/samples to related name test tubes and 10µL normal saline as blank.
3. Add 100µL R1 reagent (at RT, but preferably warmed at 37ºC).
4. Add 10µL R2 (at RT, but preferably warmed at 37ºC).
5. Mix well and incubate the reaction for 1min (exact 60sec) (preferably at 37ºC).
6. Add 100µL R3 reagent.
7. Add 10µL R4 reagent.
8. Mix well and read the absorbance at 405nm.
9. Calculate CAT activity in unknown samples based on below formula:

Calculation:

$$Catalase\ activity\ \left(\frac{U}{mL}\right) = \left(OD_{blank} - OD_{sample}\right) \times 271 \times \left(\frac{1}{60} \times \text{Sample Volume}\right)$$

$$e.g. \quad OD_{blank} = 0.720 \ \ and \ OD_{sample} = 0.675$$

$$Catalase\ activity\ \left(\frac{U}{mL}\right) = (0.720 - 0.675) \times 271 \times \left(\frac{1}{60} \times 10\right) = 2.03 U/mL$$

References

1. L.Goth. A simple method for determination of serum Catalase activity and revision of reference rang. Clinica Chimica Acta, 196, 1991 (143-152).
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3. Tamara Barbeneagr, Mihaela Cristica, Elena Ciornea, Alexandru Manoliu. Influence of nutritive substrate and pH on Catalase and Peroxidase production in Saprophytic Fungus Rhizopus Nigricans. Analele tiinifice ale Universitii „Alexandru Ioan Cuza", Seciunea Genetic i Biologie Molecular, TOM XIII, 2012, 71-76.

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