

# Microbiological assay of antibiotics

In the cup plate method, antibiotic containing cylinder is diffused into the agar layer containing the microorganisms. The zone is formed around the cylinder. The other method is disc diffusion method where zone of inhibition is measured around the antibiotic disc. The basic objective is to study various methods of microbiological assay.<sup>1</sup>

## REQUIREMENTS

**Organism:** Test microorganism

**Chemicals:** DMF solvent

Antibiotics

Nutrient Agar medium

Antibiotic disc

**Apparatus:** Borer

Petri plates

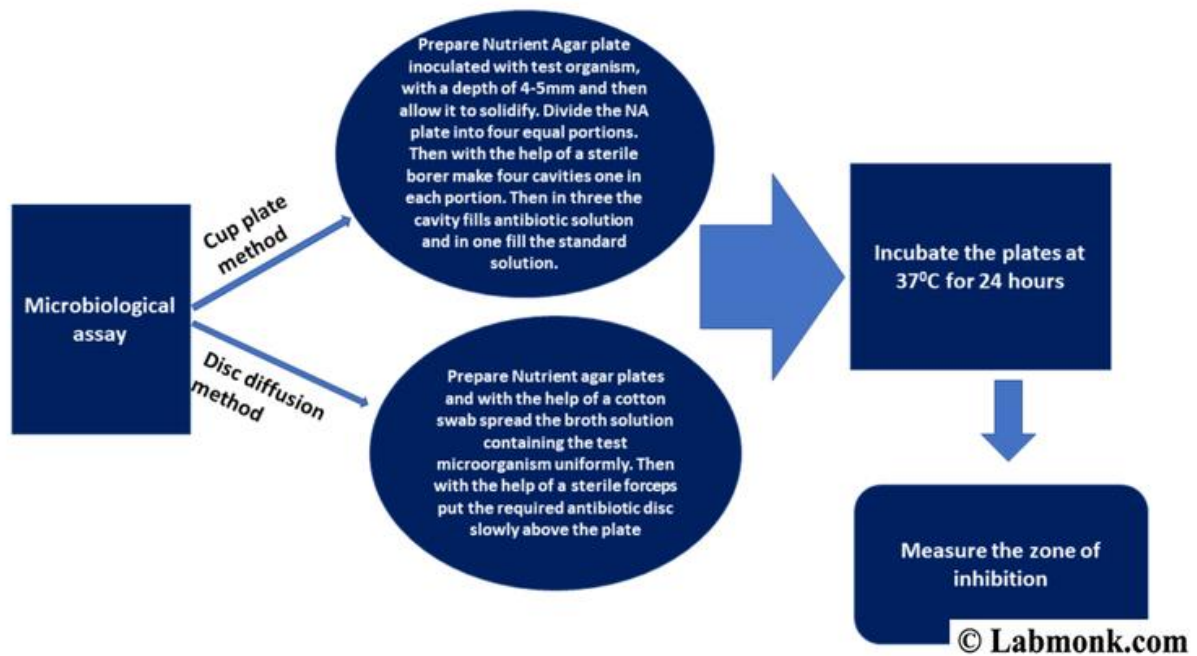
## PROCEDURE

### *Cup-plate method<sup>1</sup>*

Prepare nutrient agar plate inoculated with test organism, with a depth of 4-5mm and then allow it to solidify. Divide the NA plate into four equal portions. Then with the help of a sterile borer make four cavities one in each portion. Then fill three cavities with antibiotic solution and in one fill the standard solution. Slowly incubate the plates at 37°C for 24 hours. After incubation measure the zone of inhibition.

### *Disc diffusion method<sup>2</sup>*

Prepare nutrient agar plates and with the help of a cotton swab spread the broth solution containing the test microorganism uniformly. Then with the help of a sterile forceps put the required antibiotic disc slowly above the plate. Then incubate the plate at 37°C for 24 hours. Measure the one of inhibition formed.



## CONCLUSION

By measuring the zone of inhibition, the antimicrobial activity of the microorganism.

## REFERENCES

Ruth E. Miller, S. Brandt Rose American Journal of Clinical Pathology. 2015;11(1):414-24.