real-time LAMP (rt-LAMP) Assay

Prelims – *General Science.*

Mains (GS II & III) - *Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources| Science and Technology Developments.*

Why in News?

Researchers at the Thiruvananthapuram-based Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) have developed and tested cost-effective, rt-LAMP assay for early diagnosis of TB.

- It is a novel ***molecular test*** with high sensitivity and specificity for ***early diagnosis of Tuberculosis (TB).***
- It was able to detect TB DNA even when only 10 copy numbers were present per microlitre in a sample.
- Researchers used fluorescent dye Syto 16 (commonly used in laboratories for analyzing cells and various biological samples), which does not hinder the reaction, effectively addressing the persistent problem of false negatives observed in previous LAMP tests.
- Unlike RT-PCRs that require 3 different temperature settings to complete a test, the rt-LAMP test works at a single temperature.
- 6 primers used for amplification compared with two in the case RT-PCRs, the rate of amplification is high.
- Results of positive samples can be obtained in 10-20 minutes.
- **Approval Status -** It has been licensed to the industry for production.
- It has received approval from the Central Drugs Standard Control Organisation (CDSCO).
- It is currently being validated by the Indian Council of Medical Research (ICMR).
- The WHO Health Technology Access Pool program is currently evaluating the technology.

Reference

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