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Growth rate determination of *E. coli*

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In Development



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ABSTRACT

This is to measure the growth rate of *E. coli*.

The initially used culture is a primary culture.

This can be adapted for any other bacteria as well by giving proper growth conditions, and using appropriate wavelength to measure the OD and giving proper time intervals based on whether the bacteria is slow growing or fast growing.

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SAFETY WARNINGS

Do all bacterial work in aseptic conditions

BEFORE STARTING

Keep an overnight grown culture ready.

- 1 Grow the bacteria in an overnight (14-18 hours) culture.

- 2 Inoculate 50 ml autoclaved culture media in a conical flask with a part of the overnight grown culture equal to 2% volume of fresh media (i.e. 1ml) inside a laminar hood.
- 3 Mix the contents well and take 1 ml of the media into a clean cuvette and measure its OD at 600nm in a spectrophotometer.
This will serve as the 0 hour reading.
- 4 Put the rest of the freshly inoculated flask into a shaking incubator at 🌀 **180 rpm** at 🌡 **37 °C** .
- 5 At every 1 hour take out the flask, open inside a hood, mix well, quickly take 1 ml of the culture into a cleaned cuvette and again measure its OD at 600nm.

If doing alone, keep the clean cuvette in ice and transfer the culture into that cuvette to prevent any more growth to occur (Especially in log phase) during the time of handling the main culture.

- 6 Note down the OD till 20 hours. Then plot a graph of OD v/s time.