Quantification of bacteria using ATP Reagent HS Kits

All living cells contain ATP (adenosine triphosphate) and its degradation products ADP (adenosine diphosphate) and AMP (adenosine monophosphate). ATP is formed in energy yielding processes like oxidative phosphorylation and depleted in energy requiring processes like synthesis of new intracellular components. Consequently, the intracellular ATP concentration must be regulated within narrow limits. Therefore, the amount of total intracellular ATP can be used as an estimate of the total intracellular bacterial volume of a sample. If you know the amount of intracellular bacterial ATP per cell and there is only one type of cells in the sample, you can calculate the number of cells in the sample. Three available kits: Microbial ATP Kit HS (mammalian ATP and extracellular ATP degraded in a preincubation), Intracellular ATP Kit HS (extracellular ATP degraded in a preincubation) and ATP Biomass Kit HS (no ATP degraded).

- High sensitivity, the assay can detect 10 bacterial cells
- Non-microbial ATP can be degraded before assay of bacterial ATP
- Strong extractant release all intracellular ATP from all bacterial cells
- Always correct results as each assay is calibrated by measuring the light before and after adding a known amount of ATP standard

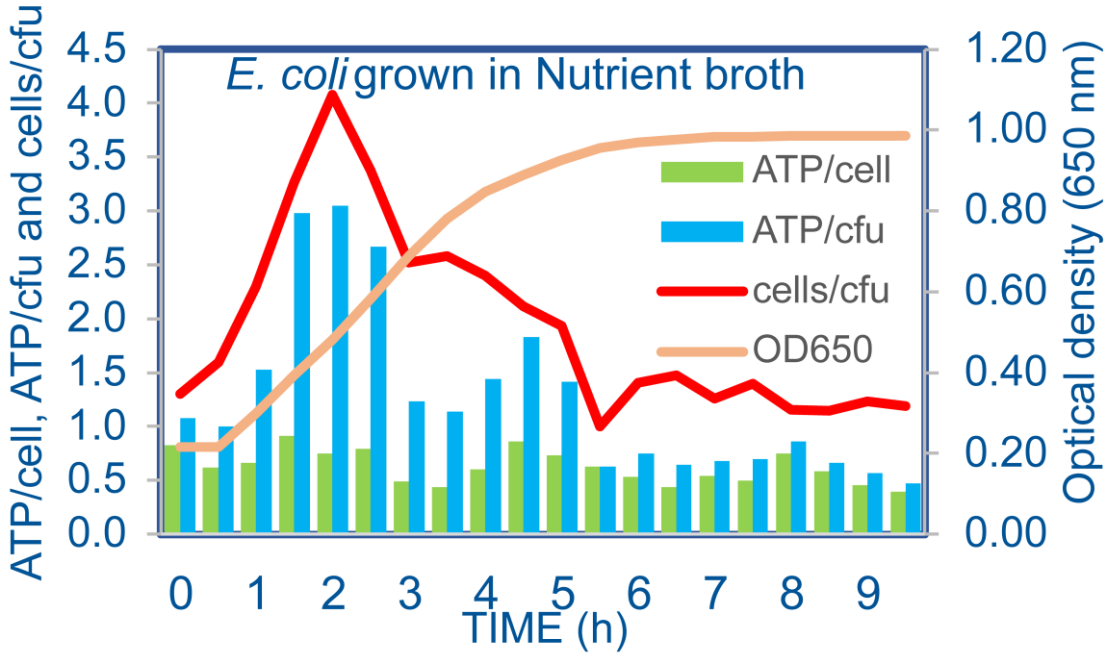

Figure 1: Monitoring growth of E. coli in Nutrient broth by ATP/colony forming unit, by ATP/cell count in microscope and by optical density.

References and more details are found in our application notes.