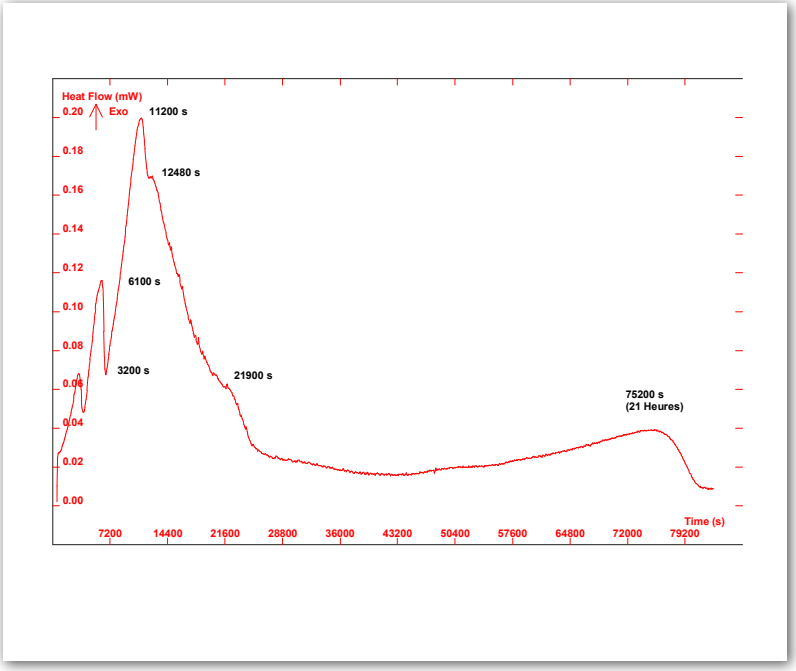
Growth of Escherichia Coli

INTRODUCTION

The heat released by a colony of bacteria can be a footprint, used to identify or discriminate them. You can also test the impact of environmental conditions on bacterial growth. like temperature, concentration, antibiotics, pollutants, culture media and strain, etc.

EXPERIMENT

A colony of Escherichia Coli in a Tryptocasein broth was studied.
700 µl of this blend were placed in a sealed cell.
The cell was placed in a MICROCALVET ULTRA kept at exactly 32°C.
A reference cell containing 700 µl of the same broth was also placed in the MICROCALVET ULTRA.



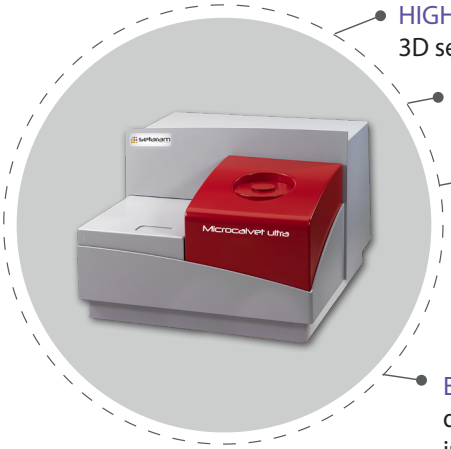
RESULTS AND CONCLUSION

At time zero of the present chart, the cell was introduced inside the calorimeter.
The DSC curve presents several exotherms. They correspond to different phases of the bacteria's growth. One can observe the enhancing or inhibiting effects of changing conditions by comparing the position of these peaks on the time axis.

INSTRUMENT

MICROCALVET ULTRA

-20 to 170°C



HIGHEST HEAT MEASUREMENT ACCURACY
3D sensor based on Peltier elements with Joule effect calibration.

MODIFIABLE TEMPERATURE CONDITIONS
for increased flexibility and replication of real life conditions.

CONVENIENT INTERCHANGEABLE CRUCIBLES AND CELLS
to perform even the most demanding experiments using one instrument :
- high pressure (1000bar) and high vacuum
- pressure measurement and control
- mixing experiment

EXTERNAL COUPLING CAPABILITY
designed to increase your research options including manometry, BET instrumentation, gas analyzers, humidity controllers and gas panels