

Abstract of Presentation

Presentation Title:

Short fatty-acids act as alarmones that directly signal to the BarA/UvrY two-component system the entry to stationary phase of growth.

Abstract:

The ability to respond to environmental signals is vital for the growth and survival of microorganisms. The sensing and processing of these signals is carried out by molecular circuits within the cell, which detect, amplify and integrate these signals into a specific response. In prokaryotes, these molecular circuits are typically organized by protein pairs, "sensor kinase" and "response regulator" proteins, that belong to the family of two-component systems.

The BarA/UvrY system comprises the BarA protein as the sensor kinase, and UvrY as the response regulator. This system positively controls expression of the small noncoding CsrB and CsrC RNAs, and has profound effects on central carbon metabolism, motility, multicellular behavior and virulence of bacteria.

Here, we present experiments aiming at identifying the environmental signal(s) to which BarA responds, and the implications of our findings on the overall physiology of the cell is discussed.