1. Metabolic differentiation to solventogenesis with slowing growth rate is sequential rather than simultaneous in Clostridium beijerinckii, with the production of butanol occurring in stage III of sporulation.

2. A pathway to n-propanol rather than to 2-propanol appears in this species at very slow growth under carbon limitation.

3. A constant fraction of carbon-energy substrate is used by Clostridium strain C7 for cellulase secretion at any growth rate: exoenzyme production is independent of maintenance energy costs and can therefore be produced efficiently at any growth rate.

4. Transformation in Bacillus subtilis occurs with maximum frequency at a doubling time of 2-3 hours, a region in which the cell is switching from anabolic to catabolic limitation.

5. A segment of pBR322 plasmid DNA has been stably inserted into the chromosome of C. beijerinckii to serve as an integration site for genes cloned on Escherichia coli vectors.
Additional Publications


Participating Personnel
Principal Investigators
Robert Zsigray and William Chesbro
Project Assistants
Robin Ross: awarded Ph.D in Microbiology
John D'Elia: awarded M.S. in Microbiology