

Physical Chemistry Seminar

Tuesday,
October 22, 2013

11:00 am

Room 1315
Chemistry Building

Ribosome-Peptide Pas de Deux: Tunnel Vision



Professor Carol Deutsch

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Host: Professor Silvia Cavagnero

The ribosome is more than a mere decoding and synthesizing machine. It is endowed with an exit tunnel through which a newborn peptide, constantly growing, moves toward its cellular destination. This molecular corridor is heterogeneous, made not only of ribosomal RNA and proteins, but also of water and ions. Together, these confined components create a specialized microenvironment for executing peptide transit, folding, targeting, co-factor recruitment, and degradation, in accordance with the chemistry of the nascent peptide and the needs of the cell. I will describe our explorations of the tunnel-peptide embrace to reveal nascent chain folding, relative accessibility and electrostatic potentials along the tunnel, preferential regions in the tunnel for side-chain sensitivity, and sequence-specific conformational rearrangements.

Refreshments will be available prior to the seminar at 10:45 a.m. outside room 1315

Graduate Students may meet with the speaker at 1:00 p.m. in Room 8335