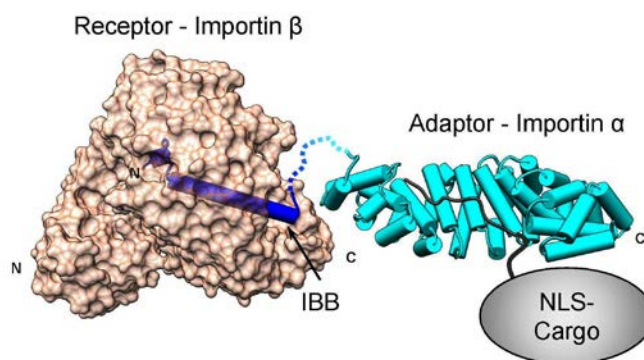




A new class of NLSs targeting membrane proteins off the beaten path



Targeting of Endoplasmic Reticulum (ER)-synthesized membrane proteins to the Inner Nuclear Membrane (INM) has long been explained by the 'diffusion-retention model'. However, several INM proteins contain long basic sequences that, in a few instances, have been shown to promote importin α/β and Ran-dependent translocation to the INM. Here, using structural, biochemical and in vivo studies we have identified a novel non-classical Nuclear Localization Signal (NLS) in the prototypical yeast INM proteins Heh1 and Heh2. These NLSs associate intimately with the minor NLS-binding pocket of yeast importin α and unlike classical NLSs efficiently displace the IBB-domain in the absence of importin β . Thus, h2/h1NLSs delineate a novel class of IBB-like membrane protein NLSs distinct from classical NLSs found in soluble cargos and of general interest in biology.

Dr. Gino Cingolani

Associate Professor
Department of Biochemistry & Molecular Biology
Thomas Jefferson University

Host: Dr. Alan Davidson

Date: Wednesday February 11th, 2015

Time: 3PM

Place: Donnelly Centre, 160 College Street, Red Seminar Room