

Micro201
Rudner Class 6: Signaling
March 28 2019

Overview:

For Thursday we will discuss one of my favorite papers: The discovery of the phospho-relay (**Burbulys, Trach, Hoch 1991**). This paper is truly a classic and highlights the power of biochemical approaches - a companion to the Tokuda paper on the discovery of the Lol system for lipoprotein transport (from Tom's 2nd class). The second required paper (**Hastie et al 2014**) discusses a completely different type of signaling pathway that involves Regulated Intramembrane Proteolysis (RIP). These signaling pathways are found in many bacteria (almost certainly in the ones you are or will study) and are frequently involved in sensing external stress. RIP pathways are found in all domains of life and represent an elegant solution to how information can be transduced across the lipid bilayer.

We will discuss cell-cell signaling and signal transduction in general. The background reading is a light review on cell-cell communication (**Bassler and Losick 2006**). This should be an easy (and fun) read. So, do it!

I also included a "guest commentary" and separately a paper on Quorum Sensing. We can't have a signaling class without quorum sensing. The commentary (**Hastings and Greenberg 1999**) is two pages long (and a fun read). It details the discovery of auto-induction and how it blossomed into a rich and active field.

Finally, there is a comprehensive review of two-component signaling pathways (**Laub and Goulian 2008**) as background reading.

Looking forward to it.

David