

Special Seminar Dept. of Chemistry

Prof. Yftah Tal-Gan from the University of Nevada-Reno will give a seminar on 2.11.2026 at 14:00 in the seminar room (shelter, ground floor) of building 208

Utilizing Chemical Biology Tools to Study Cell Signaling in Bacteria

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The *Streptococcus* genus includes commensal and pathogenic Gram-positive bacteria, many of which are frequently found co-colonizing the same natural niches, such as the oral cavity, nasopharynx, and the upper respiratory tract. Streptococci species utilize the competence regulon quorum sensing (QS) circuitry to govern competence, along with biofilm formation and virulence factor production, as well as in interspecies competition between streptococci through the production of bacteriocins and other toxic agents. We investigate the molecular mechanisms that drive signal peptide-receptor binding and lead to QS activation and interrogate the role of QS in the competition between streptococci species. To this end we develop peptide-based QS modulators with distinct activity profiles (selective vs. pan-species modulators; inhibitors vs. activators) and utilize them to determine the effects of QS modulation in single-species, mixed streptococci cultures, and *in vivo*.