Abstract Submitted
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**Environmental Affects on Surfactin Studied Using Multidimensional Infrared Spectroscopy**[1] JACOB NITE, AMBER KRUMMEL, Colorado State University — Surfactin, a cyclic lipopeptide produced by Bacillus subtilis, is a pore forming toxin that has been studied in the literature extensively. It is known to exist in two different conformations, S1 and S2, which are thought to relate to surfactin's pore forming ability. The vibrational characteristics of surfactin have been studied using linear infrared spectroscopy as well as two-dimensional infrared spectroscopy in different environments. The environments probed were specifically chosen to mimic surfactin in an aqueous environment as well as a lipid membrane environment. The vibrational spectra were interpreted using transitional dipole coupling to relate the coupling evident in the data to the structural conformers obtained from NMR data. These measurements have been used to link the structural characteristics of surfactin to different solvent environments to gain insight into surfactin's pore forming ability mechanisms.

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