

**EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]:** State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

With the increasing interdisciplinary nature of science and technology, it is important to introduce students in a given field of study to ideas and methods from other fields and to show that these fields are related. This not only will increase students' awareness of current trends in science and technology but also should boost their marketability upon graduation. We propose to develop a novel set of experiments for the undergraduate Physical Chemistry Laboratory in which students apply important techniques from the field of Physical Chemistry to solve problems of current biological interest. Because the experiments are, in fact, small research projects, we anticipate they will be particularly exciting to the students. These experiments are motivated by the renewed academic and industrial interest in disinfectants containing silver ions. For example, silver dihydrogen citrate is effective against a broad range of pathogens, acts rapidly, exhibits low human toxicity, and is environmentally-friendly. Consequently, silver ion-containing disinfectants have a wide variety of biomedical as well as general-purpose applications. Students will measure the bactericidal efficacy of a series of carefully chosen organic and inorganic silver salts, and then determine the exact chemical form of the silver ions in each solution. Correlations between chemical form and efficacy will be sought as a means of predicting the efficacy of other untested silver salts

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