

EXECUTIVE SUMMARY [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. This should NOT be a duplicate of the Technical Abstract above.

The naturally occurring peptide pepstatin is a strong inhibitor of aspartic proteases such as renin. An over-active renin/angiotensin system leads to vasoconstriction. This effect leads to hypertension. Therefore, renin inhibitors can be used as a treatment for hypertension and congestive heart failure. The unusual amino acid statine is a major component of the renin inhibitor pepstatin. Pepstatin is also a constituent in protease inhibitor cocktails that have shown promise as a treatment for HIV. Recently, statine and statine analogs have also been the subject of research as a possible treatment for Alzheimer's disease.

Due to its importance in the field of medicinal chemistry, considerable effort has been undertaken to find an economic and efficient synthetic route towards statine. These past efforts suffer from product mixtures being produced in key steps. Product purification was also necessary. Our main goals of this project is to investigate a synthetic route towards statine in which selectivity is improved in key steps and also methods of purification are improved. Both of these goals are consistent with our overall goal to develop a reliable large scale synthetic route of statine.