

## ABSTRACT

E-492, actinofuranone A, and JBIR-108 are natural compounds isolated from actinobacteria *Streptomyces* genus and can lead to the development of new pharmaceuticals as they have some biological interesting activities. Although the synthesis of these actinofuranones has been already published, this work brings new methods for the preparation of their fragments. The key step of the synthesis is enantioselective crotylboration of an aldehyde catalyzed by a chiral Brønsted acid and by which two centres of chirality are introduced in one step. The other crucial steps of the synthesis are composed of Ru-catalyzed alkene-alkene cross-metathesis and Pd-catalyzed Suzuki cross-coupling.

Keywords: natural compound, enantioselective syntheses, crotylation, catalysis, actinofuranone fragment