FUN-C

A new catalytic platform for the enantioselective functionalizations of C-C bonds

Timeline | 09/2023 to 08/2026

ICIQ People | Marcos G. Suero Research Group

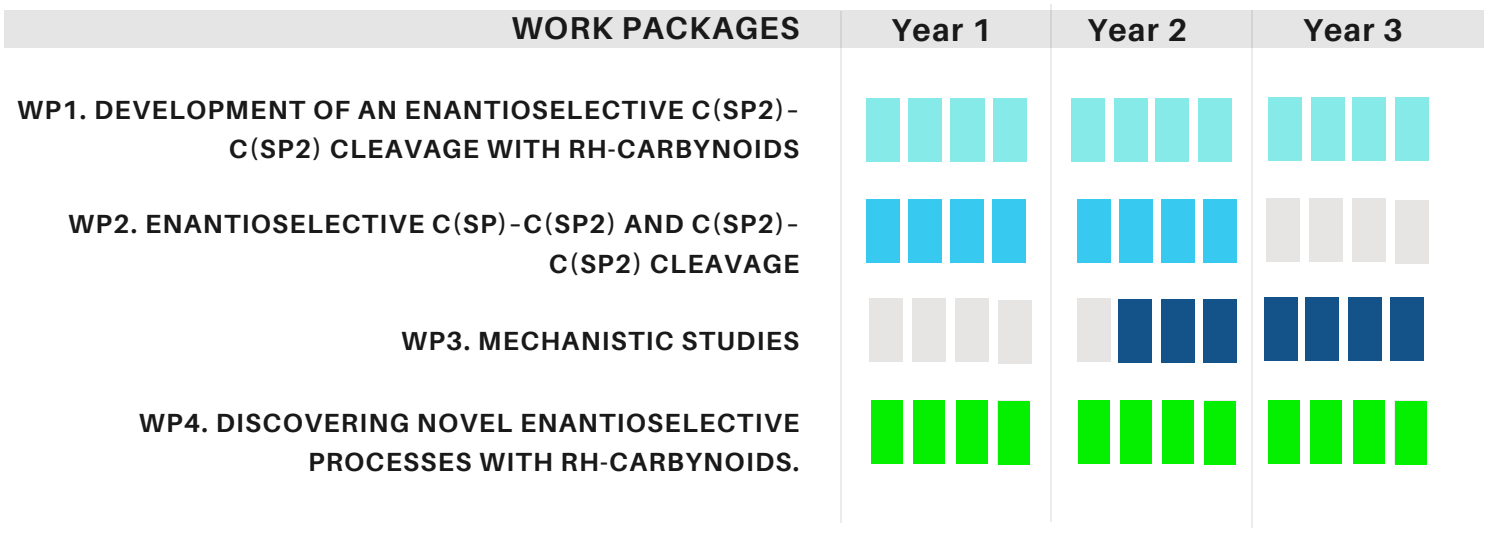
Budget | 243.750 €

Call | Proyectos I+D - Generación Conocimiento 2022

SUMMARY

The skeletal editing of molecules through the chemo- regio- and enantioselective manipulation of their CC bonds represents a longstanding challenge in synthetic organic chemistry. Clearly, the field of CC bond functionalization lags behind the more advanced area that uses relatively inert CH bonds for the construction of chiral enantioenriched molecules. However, this problem and lack of catalytic strategies to activate CC bonds represents an excellent opportunity in organic chemistry that is transversal to many other fields, including chemical biology, material science and pharmaceutical/agrochemical science. The main goal of this proposal is to develop a new catalytic platform for the enantioselective functionalizations of CC bonds with enantiopure carbyne equivalents and its application in the synthesis of valuable enantioenriched molecules. The methodology will be exploited in the synthesis of natural products and in the late-stage functionalization of drug molecules / natural products. Moreover, we aim to isolate and characterize key intermediates of the reaction and perform kinetic studies to determine the mechanism of the reaction.

WORK PLAN



Reference: PID2022-140286NB-I00