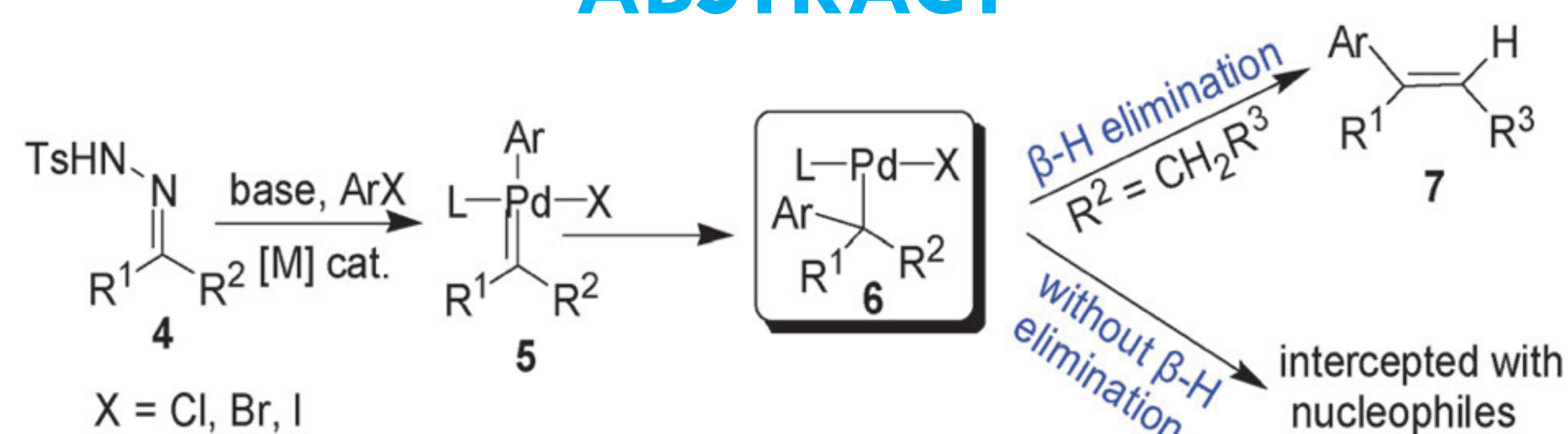


PALLADIUM CATALYZED CASCADE REACTION WITH N-TOSYLHYDRAZONES

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ABSTRACT

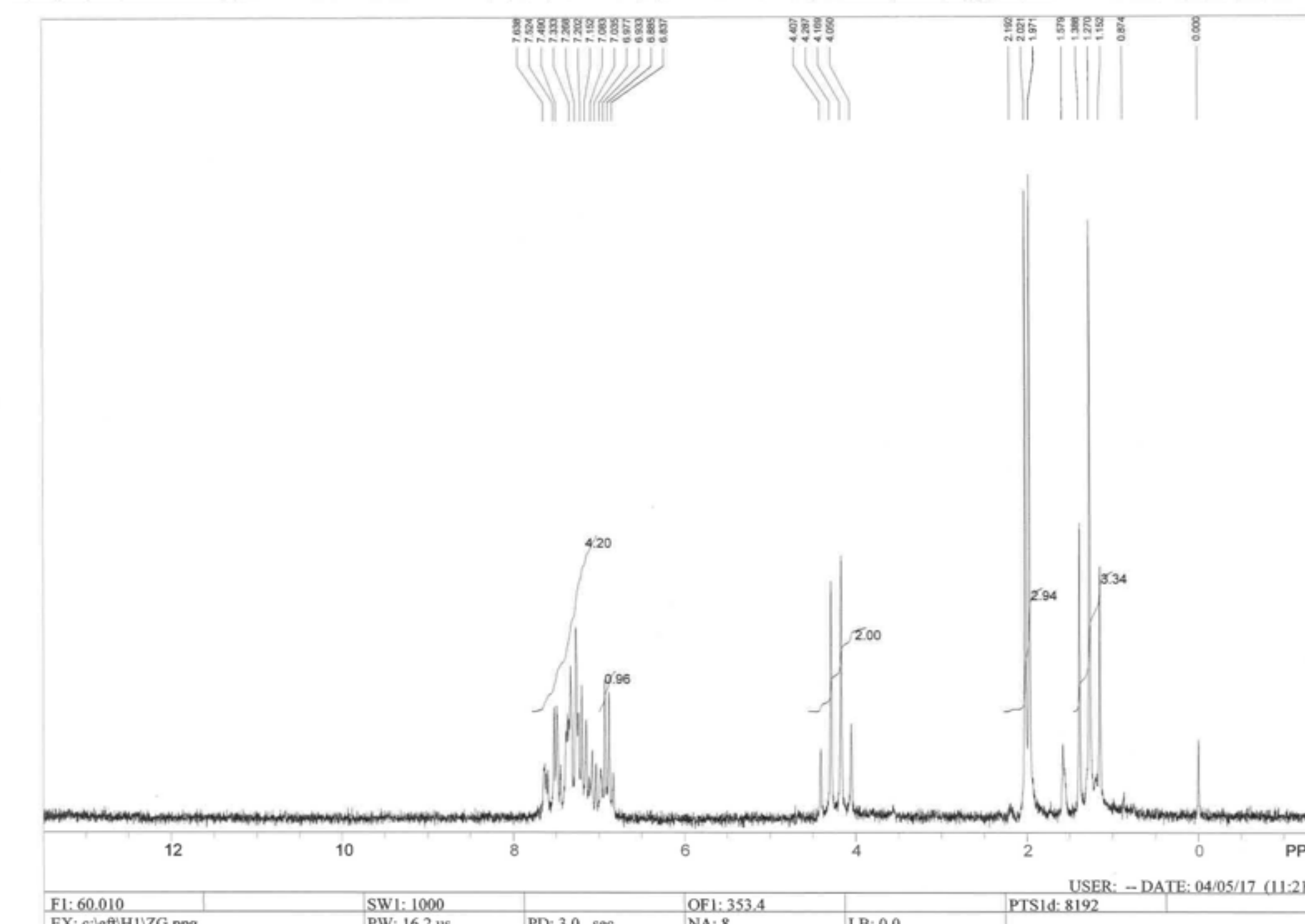
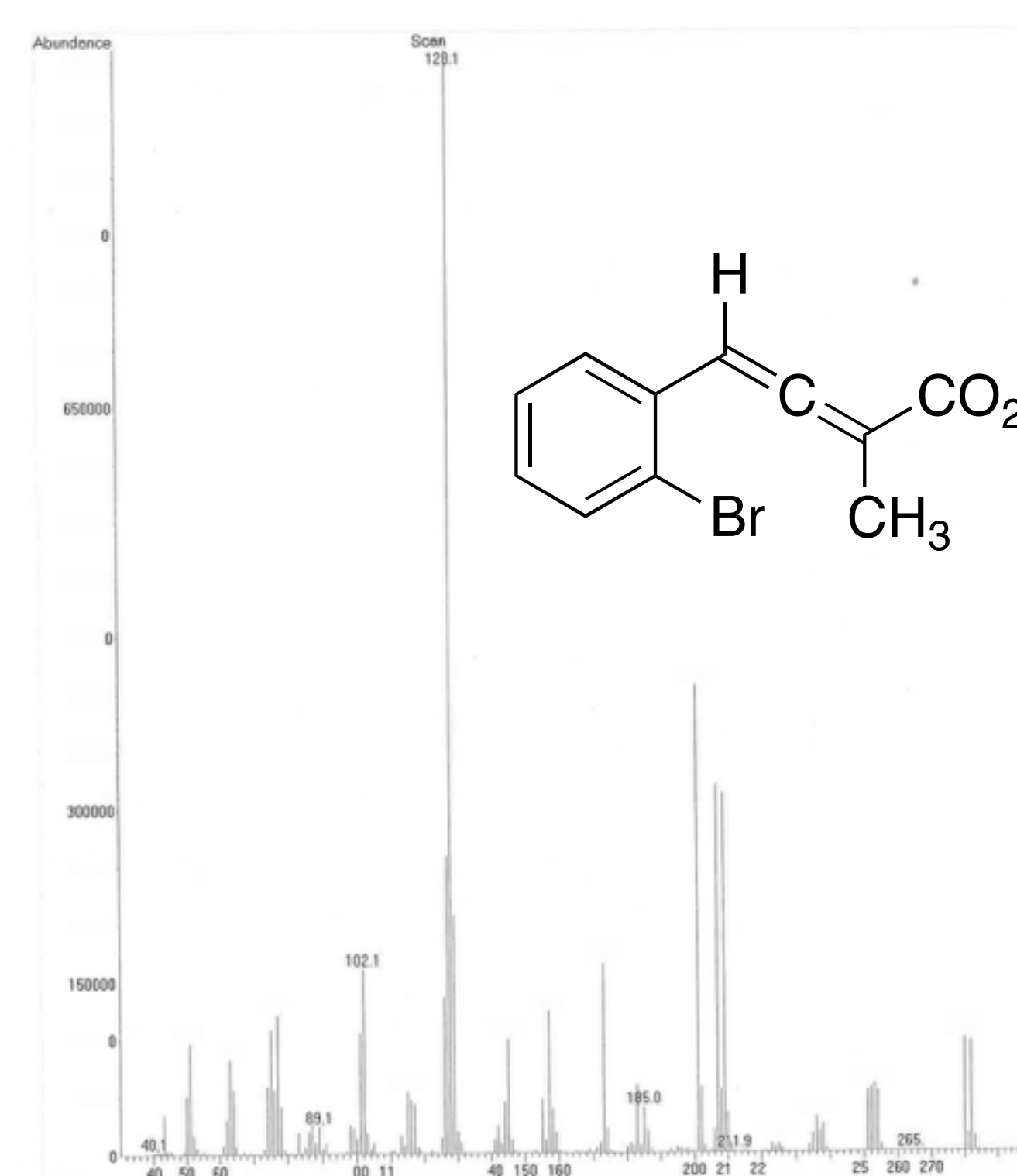


Scheme 1. Pathway for Palladium-catalyzed cross-coupling of N-tosylhydrazones with aryl halides.

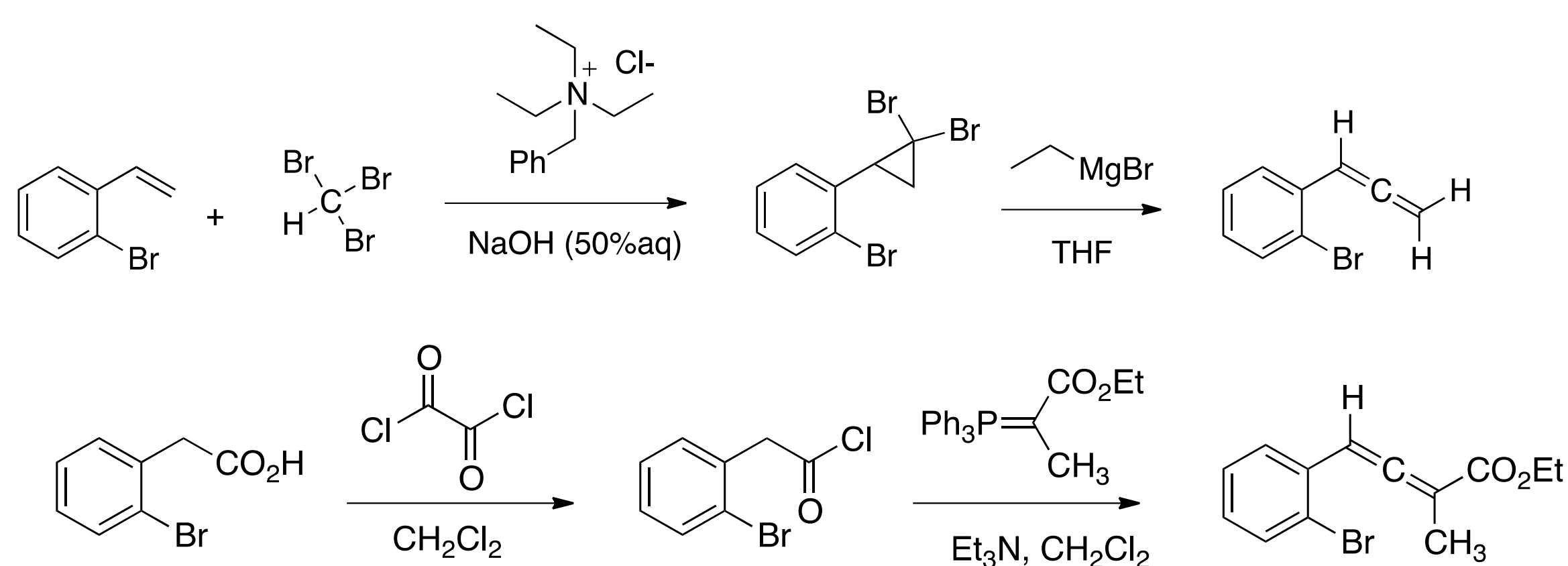
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OBJECTIVE

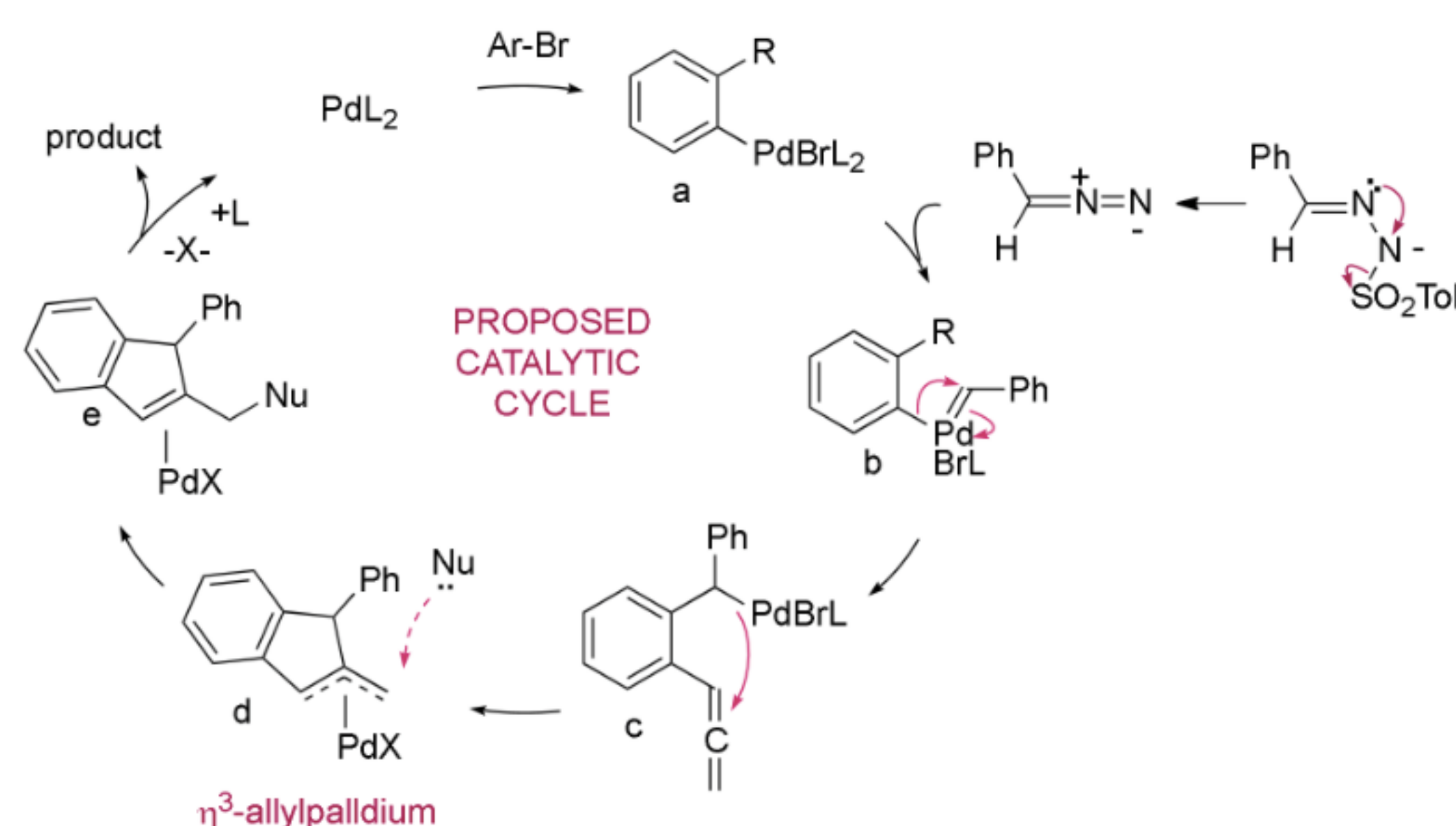
To develop palladium-catalyzed cascade coupling reactions involving aryl bromides and N-tosylhydrazones to assemble η^3 -allyl ligands by the use of intermolecular trapping with nitrogen nucleophiles. Ultimately leading to the generation of 2-(aminomethyl)indenes with newly formed sp^3 chiral centers.



RESULTS



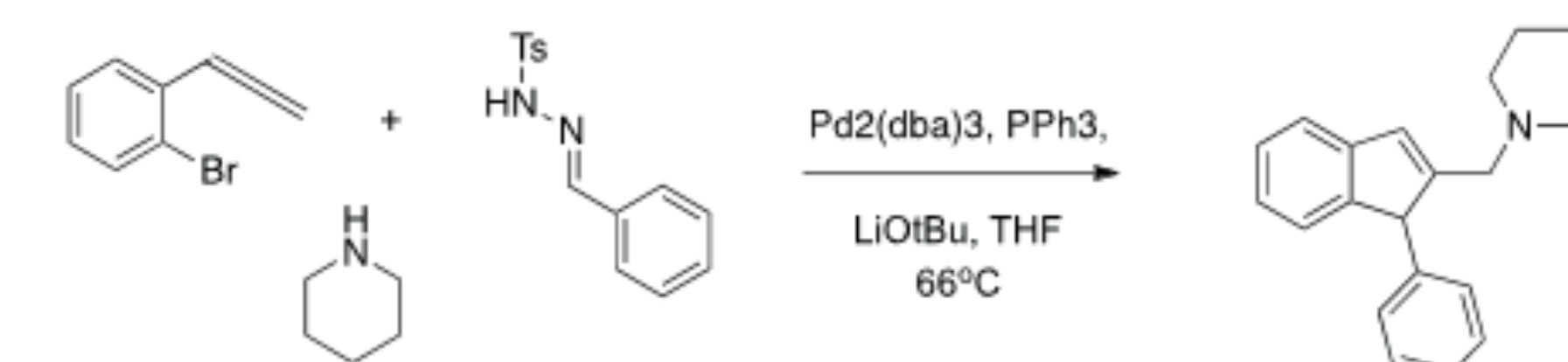
Scheme 2. Synthesis of substrates for palladium coupling reaction.



Scheme 4. Proposed Catalytic Cycle.

METHODS

A flask was charged with palladium catalyst, triphenylphosphine, amine, arylbromo allene, and THF. To this solution was added N-tosylhydrazones and lithium tert-butoxide. The reaction was heated to reflux until the starting material was consumed by TLC. Upon completion of the reaction the crude product was purified using silica gel flash chromatography eluting with 5% EtOAc/Hexanes.



Scheme 3. Key Coupling reaction.