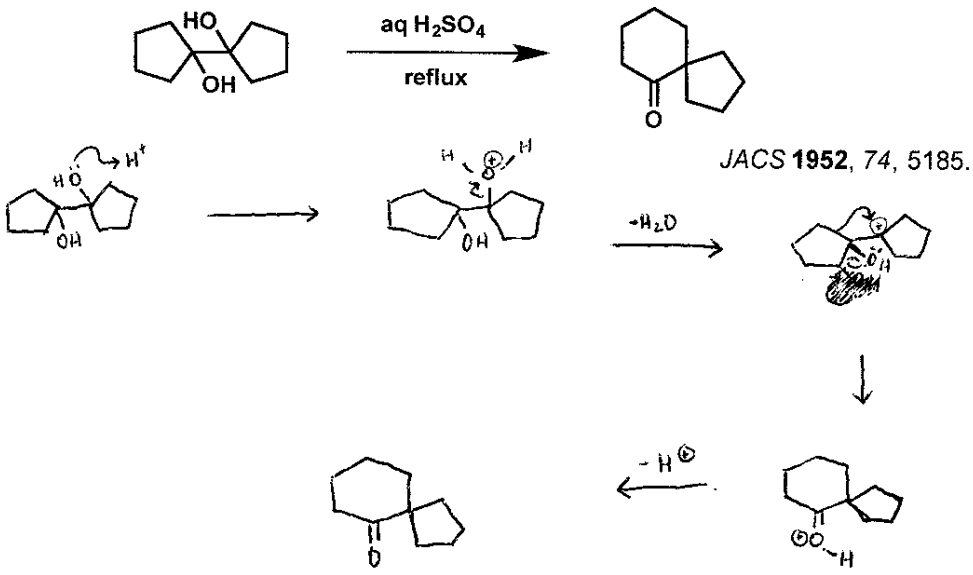
KEY

Mechanism Problem Set

Derosa, J.

4/21/16

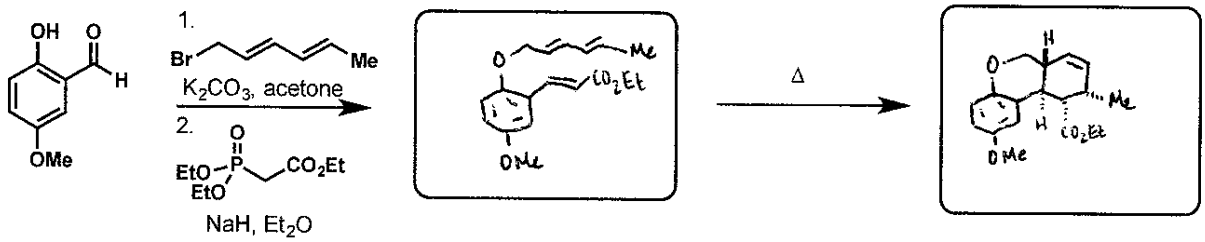
1. Propose a reasonable mechanism for the following transformation and provide the name of the rearrangement.



JACS **1952**, *74*, 5185.

Pinacol Rearrangement

2. Provide the intermediate and product of the full sequence toward the synthesis of dynemicin A.



JACS **1996**, *118*, 9509.

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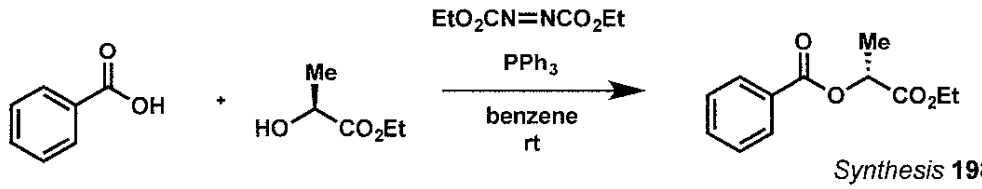
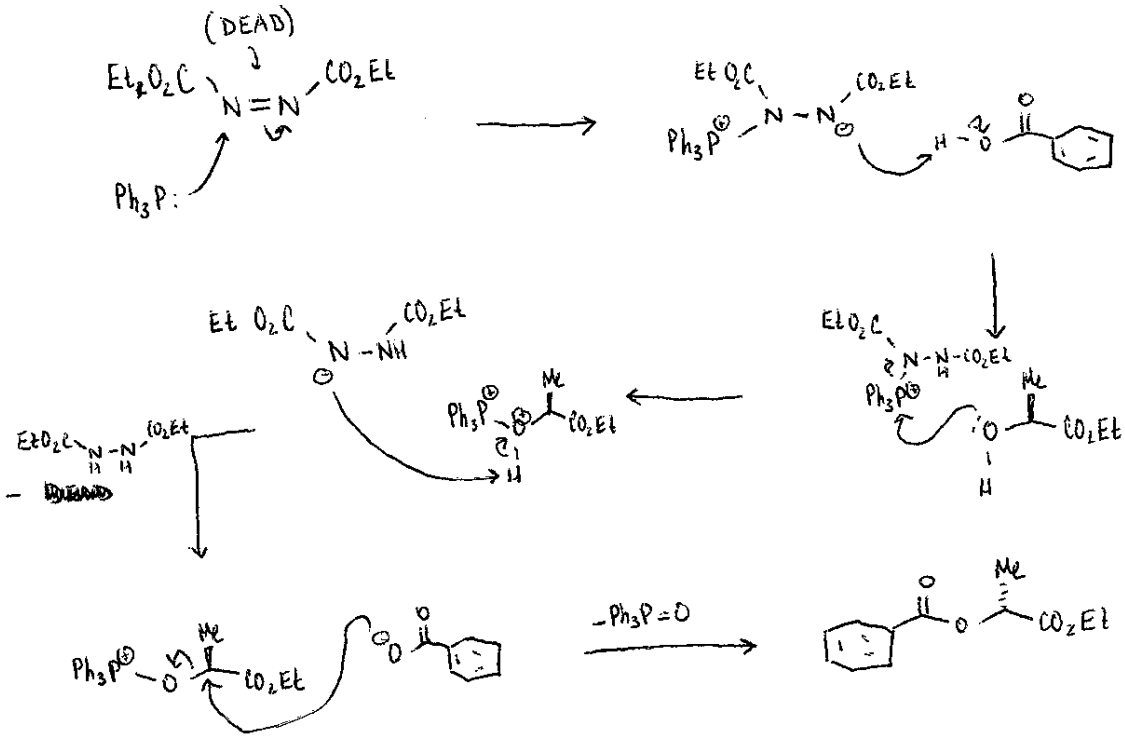
3. Propose a reasonable mechanism for the following transformation and provide the name of the reaction.



Synthesis **1981**, *1*



Mitsunobu Reaction

Mechanism Problem Set
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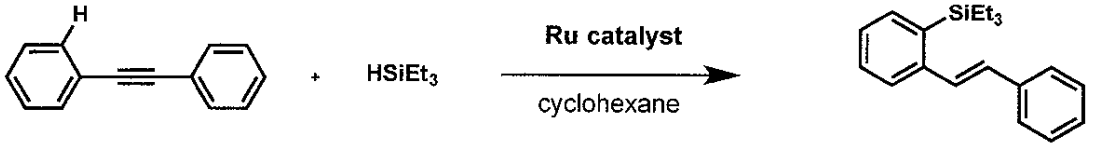
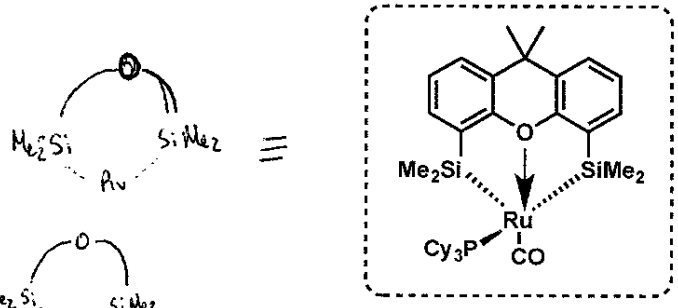
4/21/16

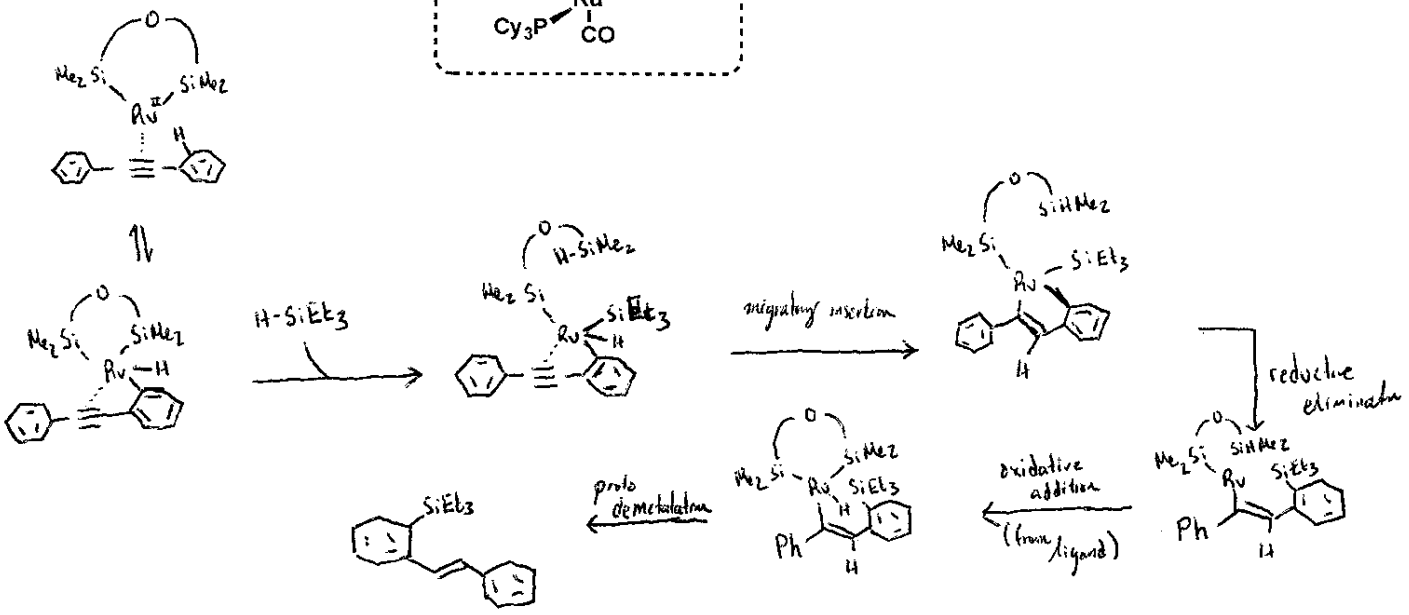
4. a) Provide a plausible mechanism for the following *ortho*-C–H silylation/hydrogenation reaction.



Organometallics, **ASAP**
(DOI: *10.1021/acs.organomet.5b01013*)

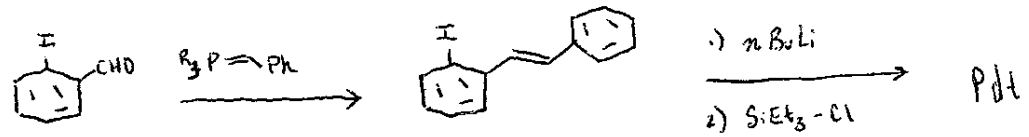


≡ **Ru catalyst**



b) Provide an alternative route for the synthesis of the product shown above.

(Kin Yang's proposal)



Mechanism Problem Set
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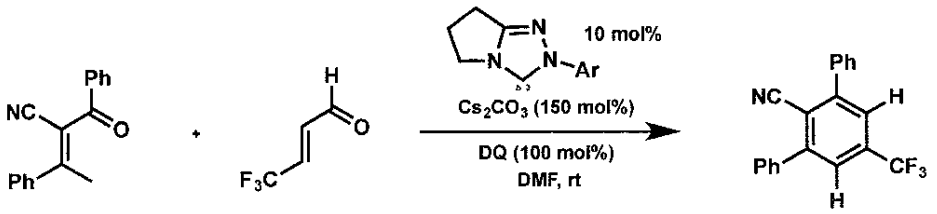
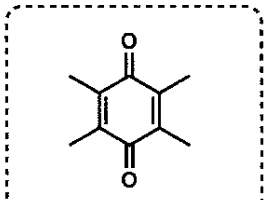
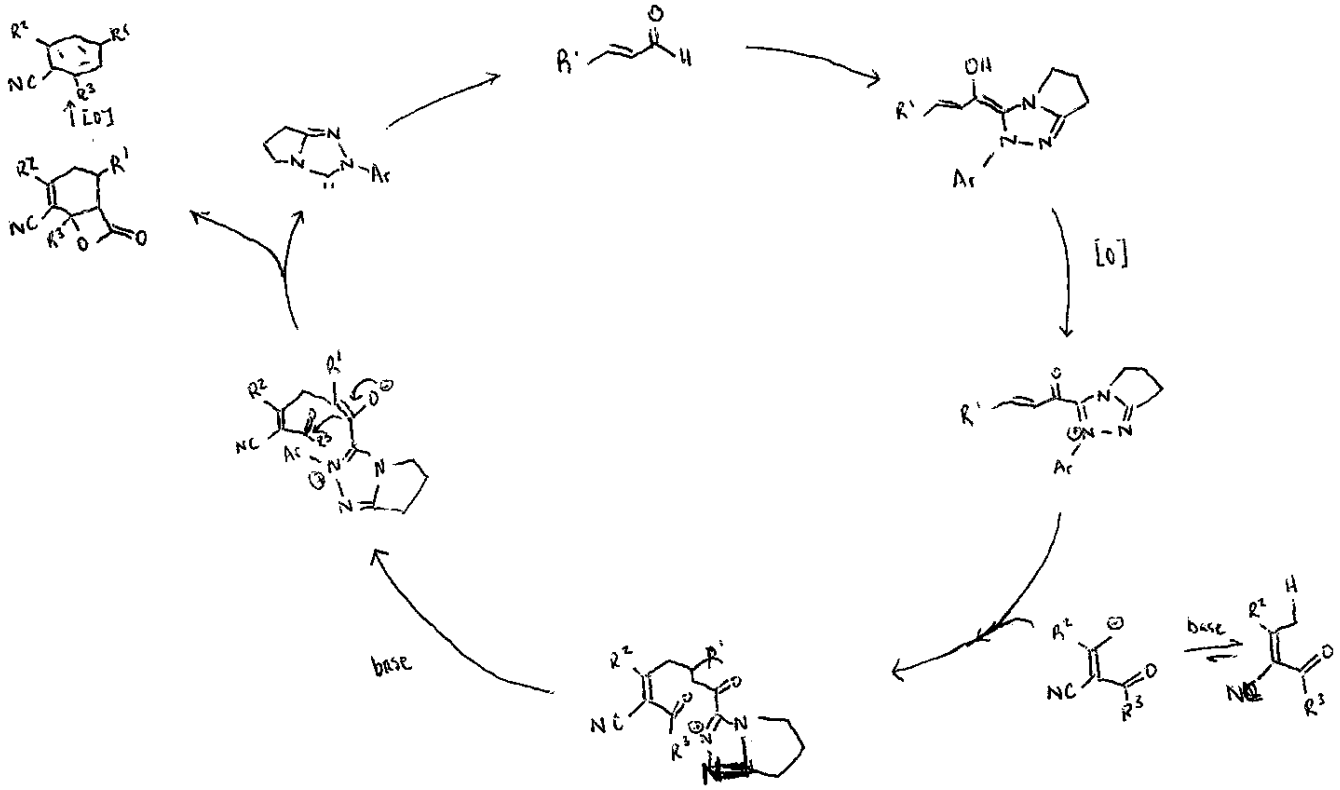
5. Propose a reasonable catalytic cycle for the following transformation. (Hint: DQ represents duroquinone.)



Org. Lett., **ASAP**
(DOI: 10.1021/acs.orglett.6b00844)



duroquinone



Mechanism Problem Set

Derosa, J.

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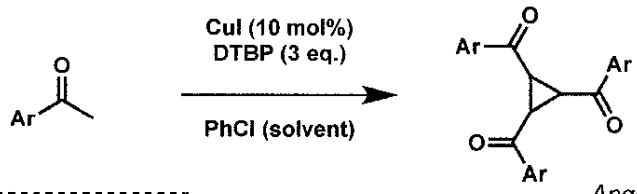
6. Provide a rational *radical* mechanism for the following [1+1+1] cycloaddition.



Angew. **2016**, *55*, 5290-5293