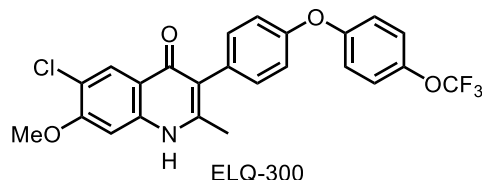


## Industrial synthesis (19/08/2021)

### New scalable synthetic route to ELQ-300, an antiparasitic quinolone

*Org. Process. Res. Dev.* **2021**, DOI: 10.1021/acs.oprd.1c00099 (VA Portland Healthcare System)

- endochin-like quinolone (ELQ) compound class may yield effective treatments for a range of important human and animal afflictions (antimalarial potency)



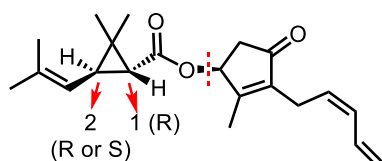
Retrosynthesis (4 disconnections) and synthesis (5 steps). *Mechanisms of the key steps.*

### Pyrethroids

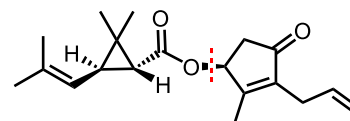
The pyrethroids are among the commercially most important insecticides on the plant protection market (several thousand tonnes per annum).



- pyrethrum has been obtained for a long time from the blooms of chrysanthemums  
- only the (1*R*)-diastereomers possess insecticidal activity



**Pyrethrin I**  
(+)-*trans*-Chrysantheric acid



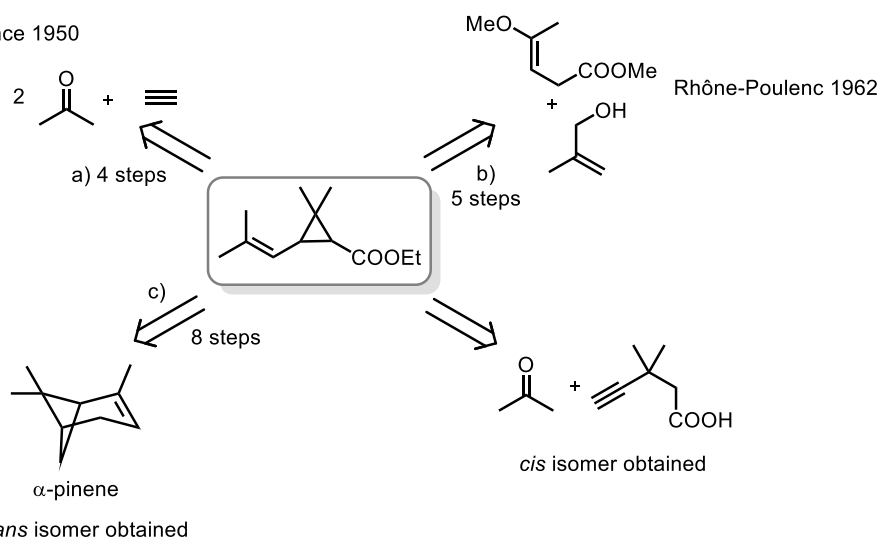
**Allethrin**

(1949, US  
1954, Japan)

bypass the difficulties of *trans/cis* isomers

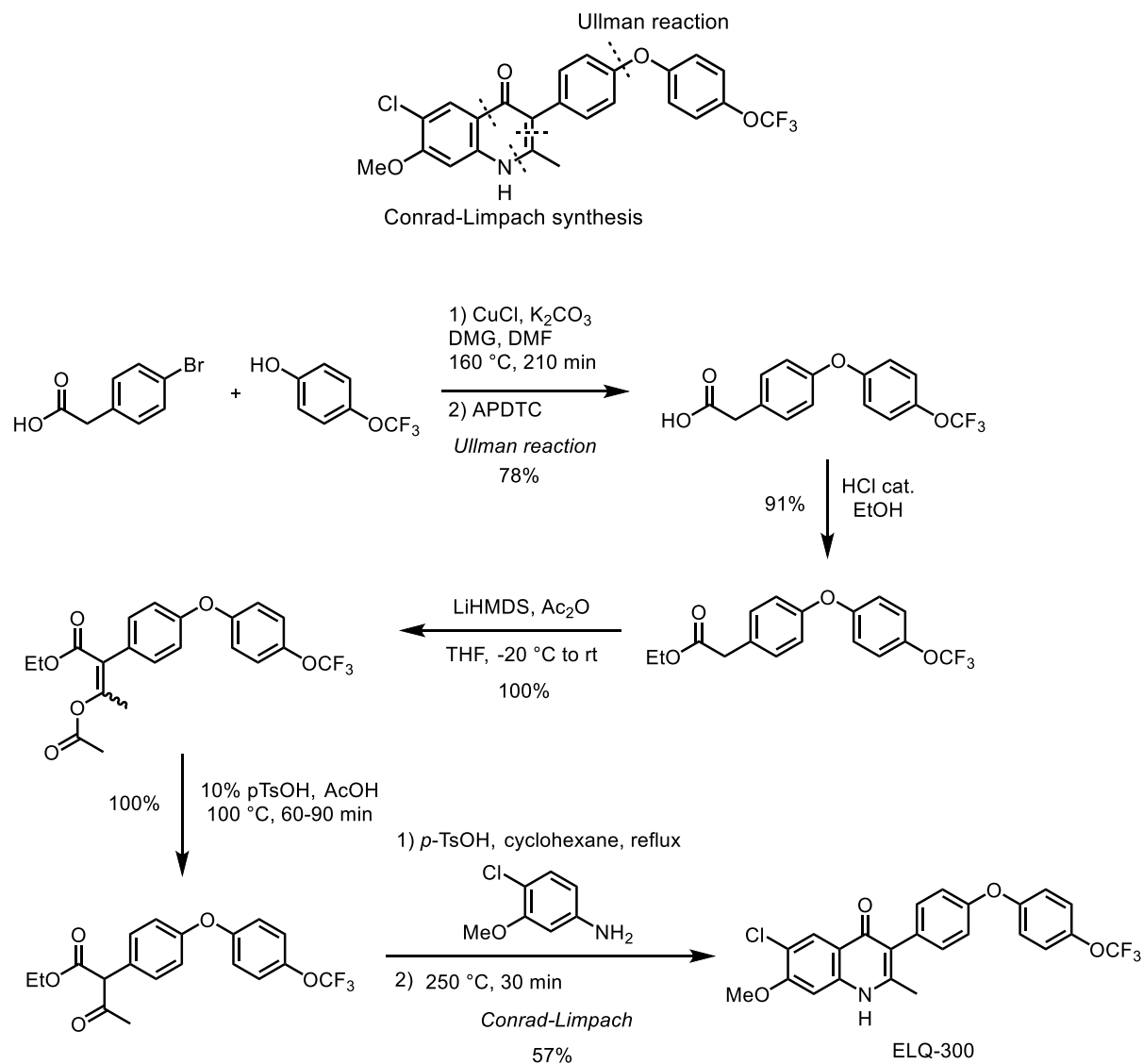
### Find the 4 syntheses

Staudinger  
Industrial process since 1950



**Solution:**

**Part 1:**



**Part 2:**

