B $\xrightarrow[\text{Na}_2\text{WO}_4]{\text{1) H}_2\text{O}_2,}$ **C** $\xrightarrow[\text{3) LiAlH}_4]{\text{2) X, ZnI}}$ **D** $\xrightarrow[\text{then BzCl, DMAP, NEt}_3]{\substack{\text{4) IBX}\\\text{5) ethyl vinyl ether}}}$ **E** $\xrightarrow[\text{7) NCCH}_2\text{CO}_2\text{K}]{\substack{\text{6) Mo(CO)}_6\\\text{TFA, H}_2\text{O,}\\\text{CH}_3\text{CN}}}$ **F**

More than one transformation is taking place in step 6.

8) **Y**, PhI(OH)OTs, pTsOH
9) **Z**, then HCl aq.

Chilocorine C

$\xleftarrow[\substack{\text{12) MeLi, pTsOH,}\\\text{DMSO/HCl}}]{\substack{\text{11) Mn(dmp)}_3,\\\text{Me(OEt)}_2\text{SiH}}}$ **I** $\xleftarrow[\text{then HCl}]{\text{10) K. LDA,}}$ **H** $\xleftarrow{}$

8) without pTSA

G

L-glutamic acid diethyl ester $\xrightarrow[\text{3) (CH}_2\text{SH)}_2\text{, Zn(OTf)}_2]{\substack{\text{1) 2,5-dimethoxytetrahydrofurane}\\\text{2) HBr, AcOH}}}$ **J**

$\xrightarrow[\text{6) BBr}_3]{\substack{\text{4) DIBAlH}\\\text{5) Ph}_3\text{PCHCO}_2\text{Me}\\\text{5) Cu(OAc)}_2,\\\text{BDP, PMHS}}}$ **K**

BDP: 1,2-bis(diphenylphosphino)benzene
PMHS: Polymethylhydrosiloxane

In a recent publication, Maimone *et al.* report the transformation below. Provide some suggestions for the mechanism:

$\xrightarrow[\text{MeCN/}t\text{BuOH}]{\substack{\text{hν (390 nm)}\\\text{NaHCO}_3}}$ **K**

L-tartaric acid dibenzyl ester $\xrightarrow[\text{70°C}]{\substack{\text{1) H}_5\text{IO}_6\\\text{2) (S)-1-phenylethan-}\\\text{1-amine}\\\text{3) isoprene, TFA,}\\\text{BF}_3\text{*Et}_2\text{O, CH}_2\text{Cl}_2, -}}$ **A** $\xrightarrow[\text{EtOH/water, 23°C}]{\substack{\text{4) H}_2,\\\text{[Rh(NBD)(PPh}_3)_2\text{]PF}_6\\\text{2.8 mol\%), EtOH, 50°C}\\\text{then H}_2\text{, Pd(OH)}_2\text{/C,}}}$ **B**

X

Y
Kosers Reagent

Z
Name?