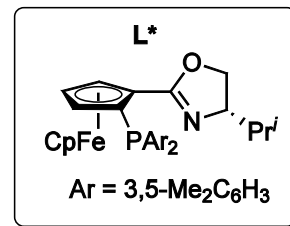
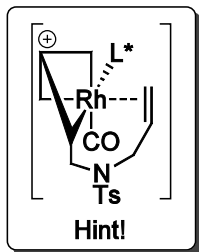
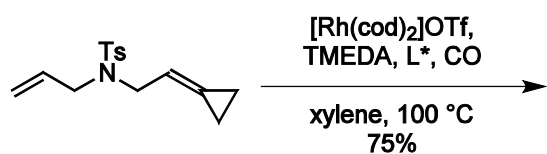
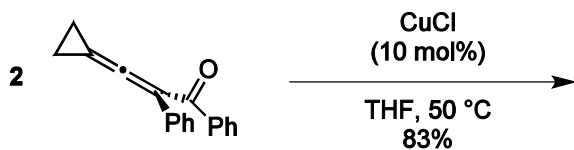


Please, provide the products and mechanisms for the following transformations

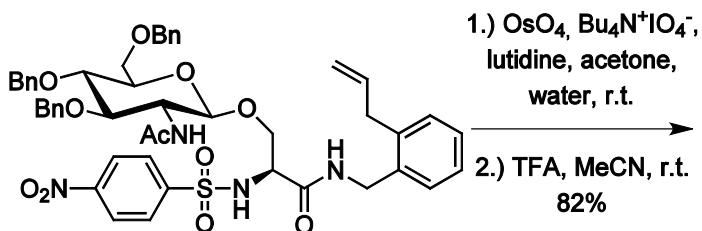


Chemical Formula: C₁₆H₁₉NO₃S

¹³C NMR: 21.3, 22.6, 40.7, 41.8, 43.2, 44.9,
 57.6, 123.7, 128.3 (2x), 129.3 (2x),
 137.6, 143.3, 166.4, 198.9.

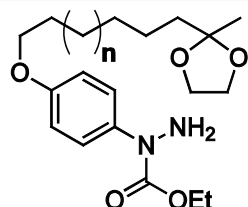


m/z: 492.2089 (100.0%),
 493.2123 (38.9%),
 494.2156 (7.4%)



m/z: 1072.3776 (100.0%),
 1073.3809 (61.6%),
 1074.3843 (18.7%)

Et₃N,
 (py-H)₂CeCl₆
 DCM, r.t.
 74%



ESI⁺ (100-500 Th):
 302.1751 (100.0%),
 303.1785 (19.5%),
 324.1571 (72.7%),
 325.1604 (14.2%)

$n = 1$
 cat. HCl_(aq)
 Pr'^rOH, reflux
 70%

ESI⁺ (100-500 Th):
 288.1594 (100.0%),
 288.6611 (36.8%),
 299.1504 (63.7%),
 299.6521 (23.4%),
 310.1414 (48.1%),
 310.6431 (17.7%)