

Tempered Threading to [3]Rotaxanes

Significance: A synthesis of [3]rotaxanes is described, where two molecules are threaded through the rings of macrocycle 1. An active template methodology is used, in which a metal ion acts as both template and catalyst for the interlocking processes.

Comment: Two threads of the same kind (6) or two different molecules (8, 10) are employed. A copper(I)-catalyzed click reaction and a palladium(II)-catalyzed alkyne homocoupling are used; the metal coordinates to the upper hoop of the macrocycle.