Synthesis of HP-β-CD/Pluronic polyrotaxanes with cholesterol end-caps. The Pluronic triblock copolymer starting material is modified so that cholesterol end-caps can be used to keep the HP-β-CD molecules (blue structure) threaded. It was found that stirring the Pluronic F127 and HP-β-CD for 48 hours afforded the best threading efficiency, while highly threaded HP-β-CD/L81 polyrotaxanes were obtained after just 1 hour of stirring.