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ABSTRACT

Crown ether is a type of typical macrocyclic polyether compounds, which can produce strong interactions with cationic species, such as metal ions and protonated amines due to its cavity structure and the strong electronegative effect of heteroatoms on the crown ether ring. In this paper, a type of silica based crown ether stationary phase was prepared by covalently bonding dibenzo-18-crown 6-ether (DBCE) on silica gel *via* copper (I) catalyzed azide-alkyne 1,3-dipolar cycloaddition (CuAAC). The tetraazido DBCE was rapidly prepared by bromomethylation and subsequent azido substitution of DBCE. Finally, this key intermediate was covalently bonded to silica beads by click chemistry to get click-DBCE. Its structure was confirmed by FT-IR and elemental analysis, and the structures of all related intermediates were confirmed by NMR, IR and MS spectra. The crown ether based stationary phase