

Evaluation of Supramolecular Catalysis of an Introverted Bis-Au Cavity in the Dimerization of Terminal Alkynes

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ABSTRACT TEXT (Arial, 12 font, left aligned, maximum 250 words)

Catalytic significance of metallo-cavitand enclosed space endowed with a diquinoxaline-spanned resorcin[4]arene is described, including a description of synthesis of model compounds that decreased the size of cavity space. The diquinoxaline-spanned resorcin[4]arene provided a definite compartment, in which the two Au centers enticed two terminal alkynes to undergo the coupling reaction. This coupling transformation selectively yields a conjugated enyne in head-to-tailed fashion. In the case of different coupling-partners, cross-coupling adducts predominantly formed. We synthesized two kinds of model compounds in which one lacked two quinoxaline walls and the other had two pyrazines walls, and found that these catalysts exhibited much lower reactivity. These two model compounds in toluene-*d*₈ shaped mostly vase-formation, not kite type. Thus, large space planked by two-quinoxaline walls proved to play a quintessential role for the catalytic event.