Exploring Innovative Intramolecular C(sp3)—H bond Functionalization Processes: Gold(I)-Catalyzed Cycloisomerization of 1-Haloalkynes.

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The interest in the functionalization of aliphatic small molecules has arisen in the last few years. In addition, gold catalysis has been present in chemistry in several important reactions. Herein, we present our research, which focuses on the gold(I)-catalyzed cycloisomerization of aliphatic 1-haloalkynes and the deep understanding, both mechanistically and experimentally, of these processes.

Since 2023, when a gold(I-catalyzed 5-endo cycloisomerization of 1-bromoalkynes was first described by our group, we have been focusing on the in-depth study of this reactivity (functional group tolerance, systematic studies, and mechanistic insights). We are currently trying to expand this transformation to other 1-halosubstituted alkynes to access to different modes of cyclization as well as to gain a deeper understanding of these processes.