SYNTHESIS OF CYARSIDE (-C≡AS) BY SELECTIVE OXIDATIVE ADDITION AND ITS REACTIVITY TO FORM HETEROCYCLES

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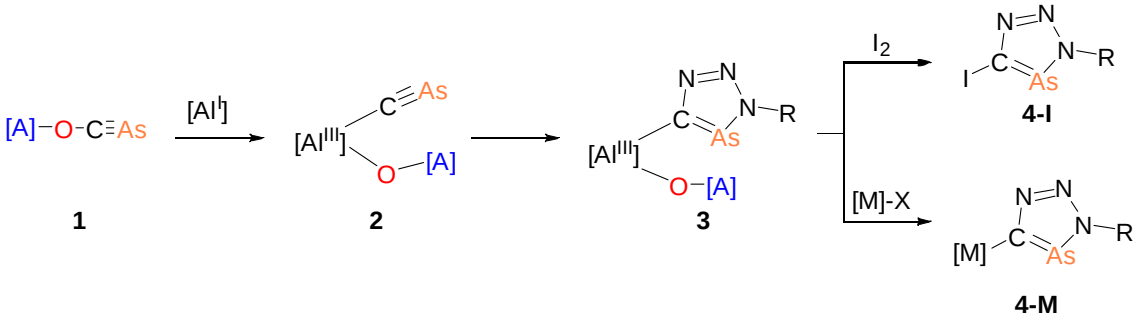
The synthesis of arsaalkynes (R–C≡As) remains challenging due to the inherent reactivity of the C≡As triple bond [1]. Consequently, only a limited number of isolable compounds have been reported to date, typically synthesized through laborious and low-yielding processes. [2–4] Here we demonstrate that the selective oxidative addition of the C–O bond of an activated arsaethynolate anion ($AsCO^-$) **1** is a viable approach for accessing the cyarside functional group **2** (which is valence isoelectronic with nitriles). This strategy generates reactive C≡As triple bonds that undergo intermolecular cyclization reactions to afford novel arsenic-containing heterocycles **3** [5]. These products can be further functionalized **4**, highlighting the synthetic potential of this approach for accessing previously inaccessible arsenic-containing molecules.



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