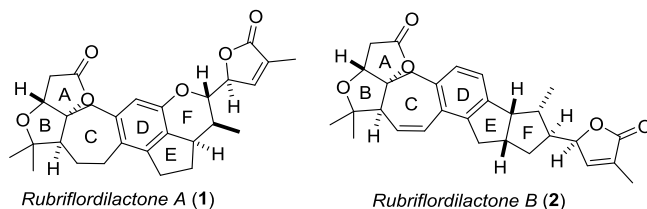


Progress towards the Total Syntheses of Rubriflordilactones A and B

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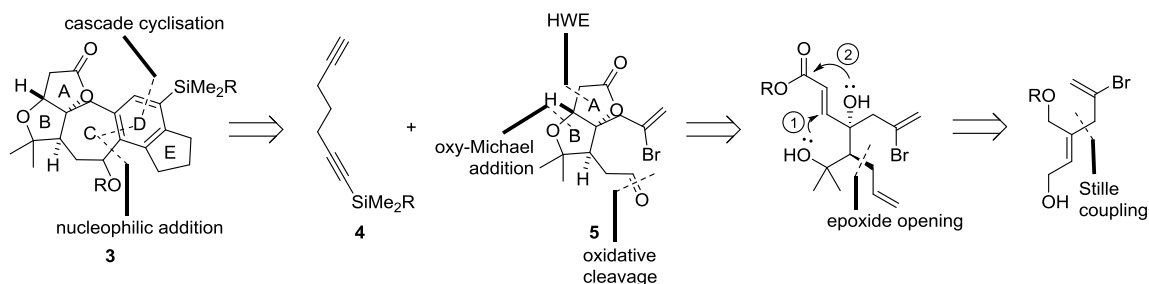
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Rubriflordilactones A and B (**1** and **2**, Scheme 1) are intriguing, highly oxygenated polycyclic natural products isolated from *Schisandra rubriflora* in 2006.¹ The latter is of particular biological interest, as it shows significant anti-HIV activity.¹



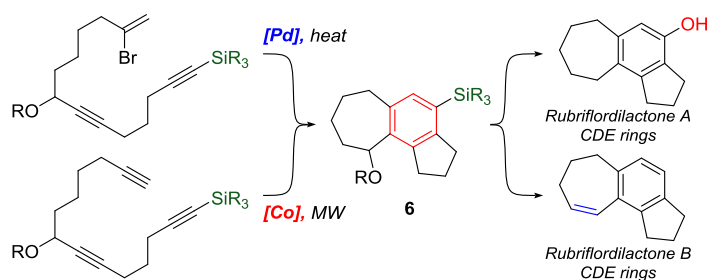
Scheme 1

Synthetically, the *ABCDE* rings of both rubriflordilactones are closely related, and we envisage that both natural products can be assembled by convergent synthesis of the pentacyclic core, represented by model system **3** (Scheme 2).



Scheme 2

Retrosynthetically, pentacycle **3** can be generated *via* the key cascade cyclisation step on a bromoendiyne, prepared by the coupling of diene **4** with *AB* ring system **5** (Scheme 3). Progress towards *AB* ring system **5** will be reported.



Scheme 3

Assembly of 7,6,5-ring systems has been modelled in previous work on palladium-mediated cascade cyclisation of bromoendiyne *via* carbopalladation developed within the group.² Recently, we have applied this methodology, and also developed a cobalt-catalysed cyclotrimerisation approach, to devise complementary routes to the functionalised *CDE* rings of both rubriflordilactones (Scheme 3).³ The silyl groups played a key role in both the cascade reaction and derivatisation of the *D* ring in **6** towards the rubriflordilactone cores. Additionally, the benzylic alcohol in **6** can be selectively manipulated to obtain the different *C* rings observed in the rubriflordilactones.

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2. M.-C. A. Cordonnier, S. B. Jennifer Kan and E. A. Anderson, *Chem. Comm.*, 2008, 5818-5820.
3. S. S. Goh, H. Baars, B. Gockel and E. A. Anderson, *Org. Lett.*, 2012, **14**, 6278-6281.