Synthetic Studies on a Total Synthesis of Antitumor Renieramycin T

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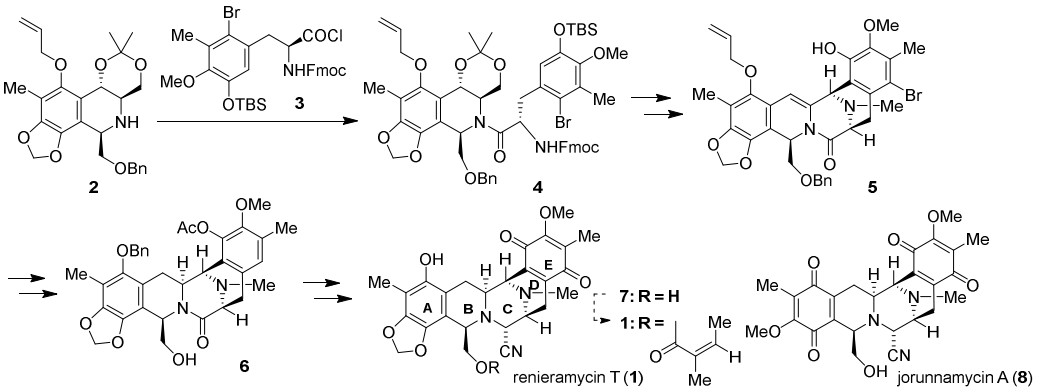
【Introduction】 Renieramycin T (**1**) has been found from Thai blue sponge *Xestospongia* sp. as a very minute constituent in 2009. It is a first entry of antitumor bis-1,2,3,4-tetrahydroisoquinolinequionones that has a novel hybrid structure of ecteinascidins and renieramycins.[1)] We studied a total synthesis of **1** from **2**, which was prepared using a radical cyclization reaction as crucial key steps.[2)]

【Results and Discussion】 Condensation of **2**[2)] with an acyl chloride **3** (as an *E*-ring component) gave amide **4**. Double cyclization of **4** into the pentacyclic framework **5** has been succeeded in several steps. Regioselective oxidation of the benzyl protected phenol **5**, followed by converting an amide carbonyl of **6** into an aminonitrile by partial hydride reduction, and introduction a cyano group sequence produced the primary alcohol **7**. This structure was identified with the authentic sample prepared from jorunnamycin A (**8**) under our original photochemical transformation. We are now ongoing to transform **7** into **1**.



1) Daikuhara N.; Tada Y.; Yamaki S.; Charupant K.; Amnuoypol S.; Suwanborirux K.; Saito N. *Tetrahedron Lett.*, **50**, 4276-4278 (2009).

2) Fishlock, D.; Williams, R. M. *Org. Lett.*, **8**, 3299-3301 (2006).