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Total Synthesis of Halichondrin A and C

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The first total sythesis of Halichondrin A and C was achieved by utilizing multiple Cr-mediated coupling to form a new C-C bond*. Halichondrins A/C are C12- and C13-di-hydroxylated / C12-hydroxylated form of Halichondrin B, whose right-half substructure led to the antitumor drug Eribulin (*Figure 1*). The syntheses are highlighted by the construction of C8-C14 polycyclic ketal for both A and C (*Figure 2*).

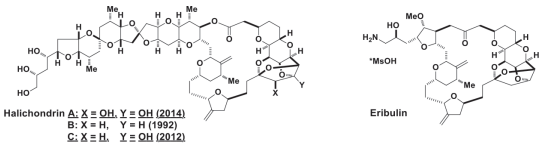

Figure 1. Halichondrins and Eribulin

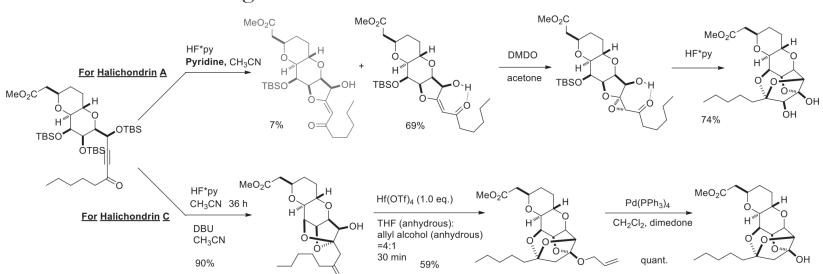

Figure 2. Model syntheses of Halichondrin A/C polycycles

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