Total Synthesis of Denigrin E and Its Oxidative Conversion into Co-occuring Metabolite Denigrin D

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June 30, 2022

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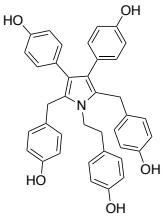
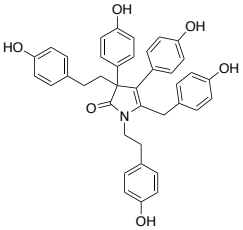
Chemistry Department, Boston College

Denigrin E and Denigrin D



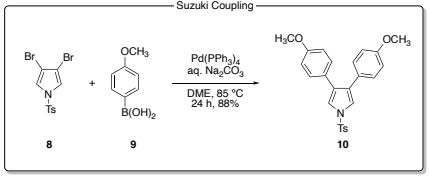
denigrin E

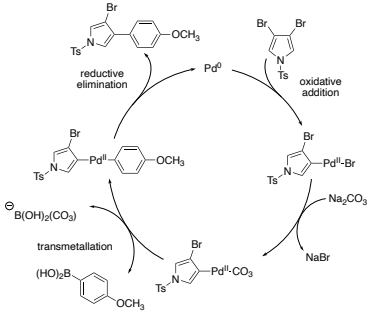


denigrin D

- Isolated from *Dactylia* sp. nov. marine sponge, in Maldives
- PAX3-FOXO1 inhibitor: a genetic change found in alveolar subtype of rhabdomyosarcoma
- Rhabdomyosarcoma: a soft tissue sarcoma that predominantly occurs in children and young adults
- Pyrrole-containing marine alkaloids: total synthesis of denigrin D is challenging due to quaternary stereogenic center

First Synthetic Approach





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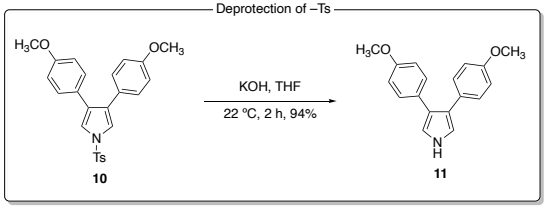

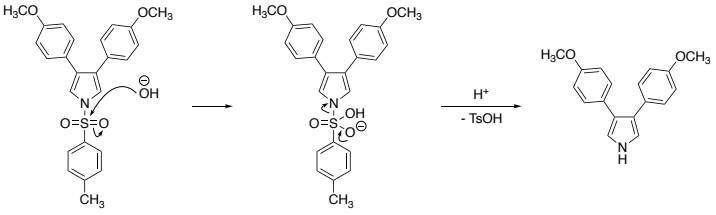

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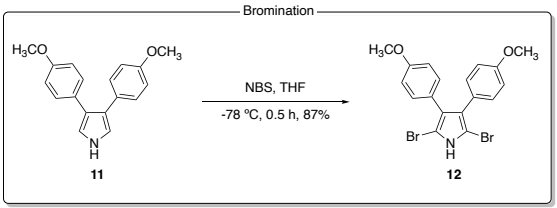

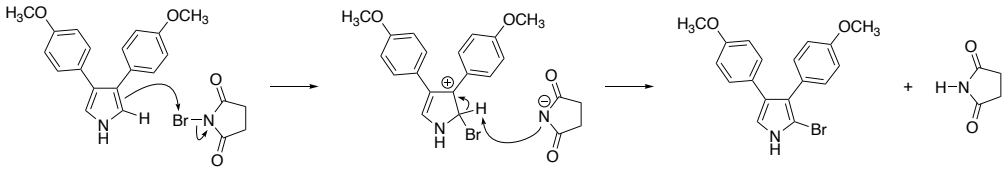

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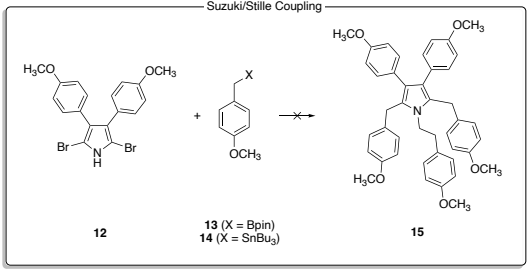

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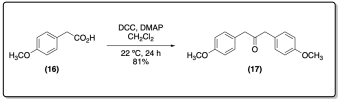

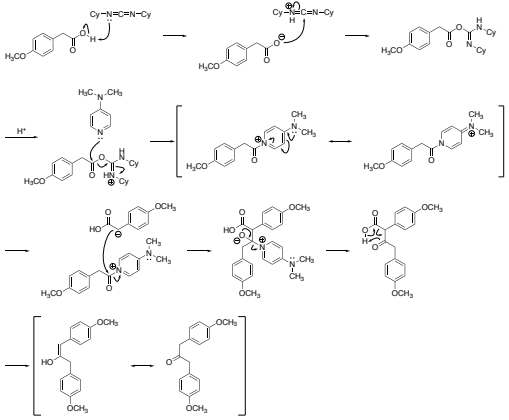

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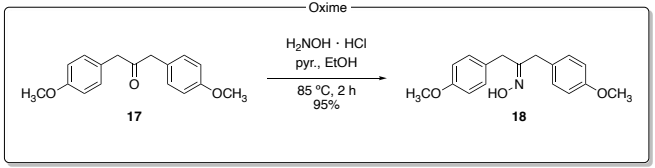

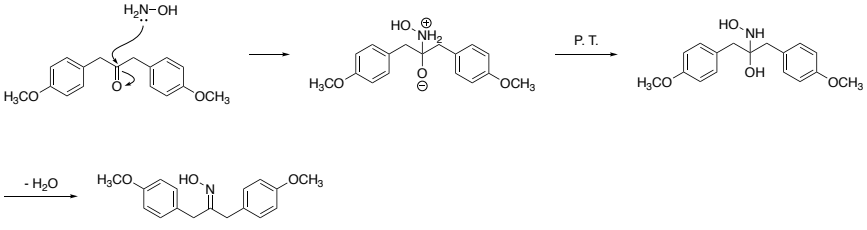

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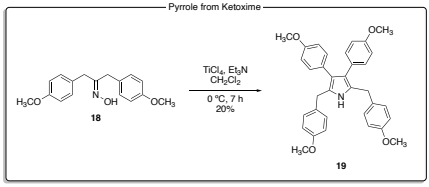

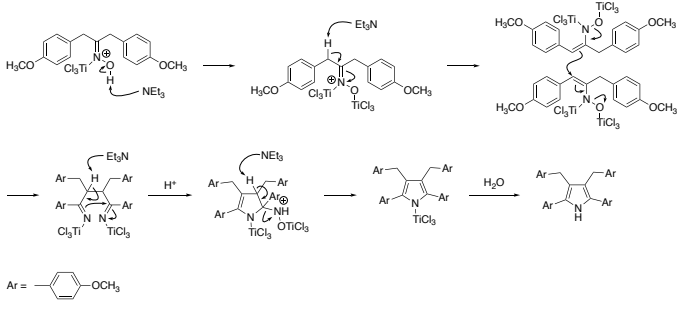

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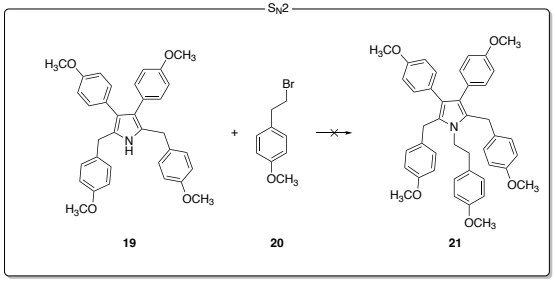
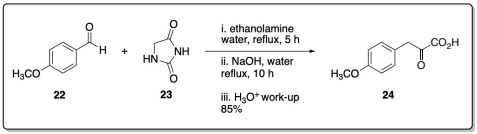
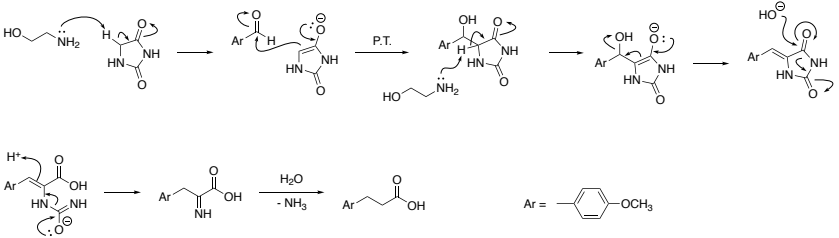


Total Synthesis of Denigrin E and D





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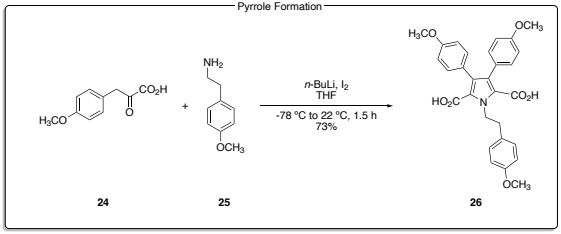

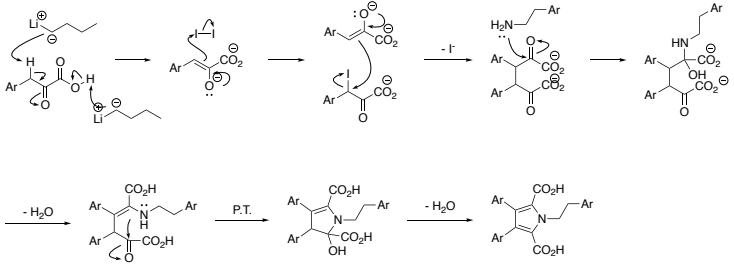

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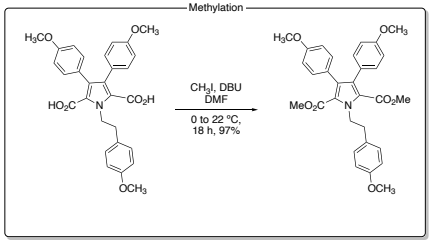

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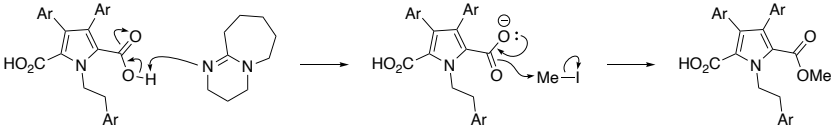

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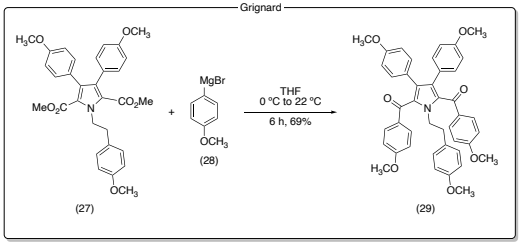

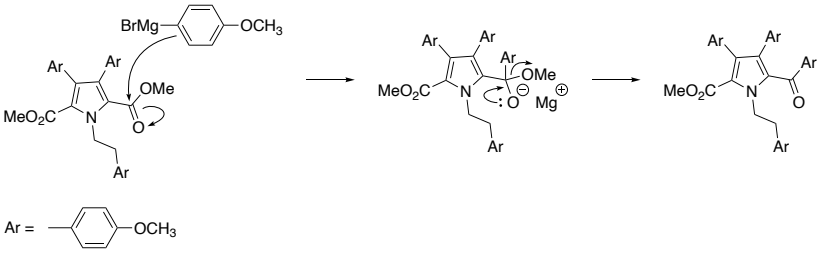

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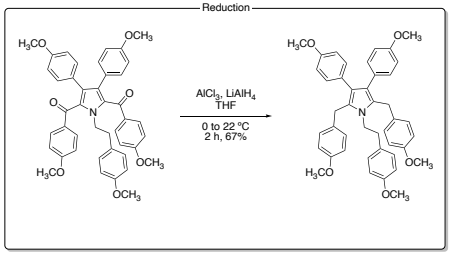

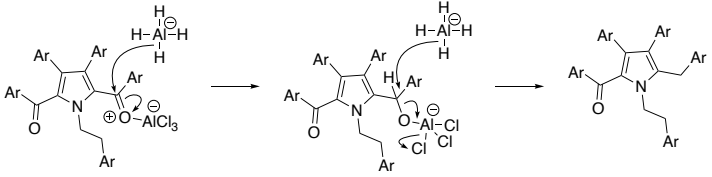

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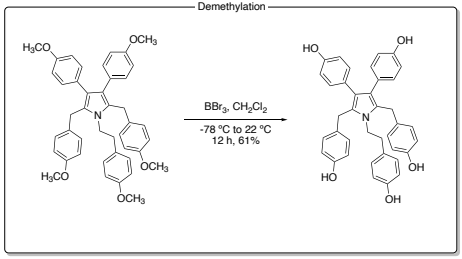

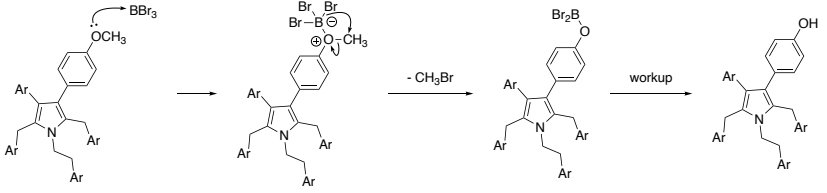

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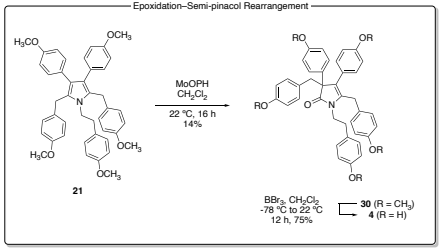

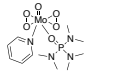

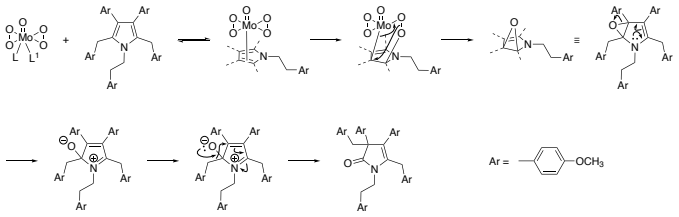

Sharpless, K. B., et al., *J. Am. Chem. Soc.* **1972**, 94 (1), 295-296.