

FORMAL TOTAL SYNTHESIS OF PSEUDOPTEROXAZOLE.
PROGRESS TOWARD TOTAL SYNTHESIS OF HAMIGERAN B.

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ABSTRACT

In the first chapter, a formal total synthesis of pseudopteroxazole is presented, highlighting an *E*-selective Horner-Emmons reaction, a Buchwald-Hartwig coupling, and a diastereoselective intramolecular Michael addition.

In the second chapter, the effort toward synthesizing anti-viral natural product hamigeran B is summarized. Several routes to the core structure were shown separately, including those unexpected discoveries when pursuing those routes. Tius-Nazarov cyclization was first applied in synthesizing natural product; an efficient palladium-catalyzed oxidative intramolecular carbocyclization was realized on an α -hydroxy enone for the first time; an interrupted Nazarov cyclization of a hydrolysis intermediate of dithiane was achieved.