

First total synthesis of Combretastatin D-2 congeners named Isocorniculatolide A and 11-o-methylisocorniculatolide.

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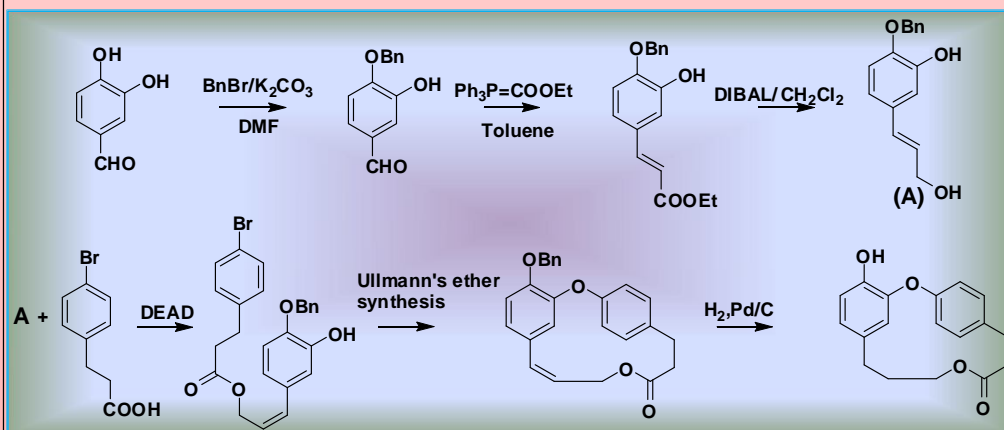
ABSTRACT:

- First total synthesis of newly isolated natural products Isocorniculatolide A and 11-o-methylisocorniculatolide A was accomplished. Commercially available 3, 4 dihydroxy benzaldehyde was selectively protected at the 4-position followed by the Wittig elongation to afford α , β unsaturated ester which was subsequently treated with DIBAL to afford (E)-2-(benzyloxy)-5-(3-hydroxyprop-1-enyl) phenol and then finally coupled this intermediate with 3-(4-bromophenyl) propanoic acid to achieve (Z)-3-(4-(benzyloxy)-3-hydroxyphenyl) allyl 3-(4-bromophenyl) propanoate. Finally macro cyclization using Ullmann ether synthesis and then treatment with Pd/C accomplished Isocorniculatolide A. In the same way we achieved 11-o-methylisocorniculatolide starting from Isovannillin.

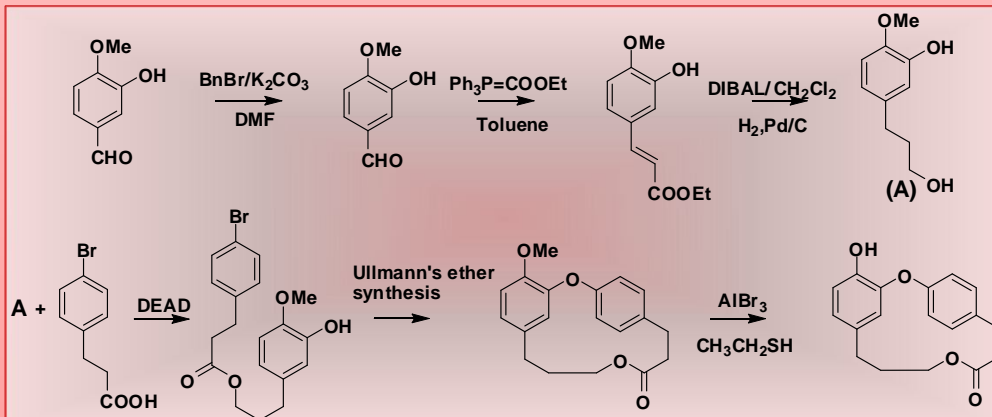
INTRODUCTION

- Aegeoceras corniculatum* is a small shrub which grows in the mangrove swamps of Asia and Australia and is known for usage in treating asthma, diabetes, rheumatism and inflammation.
- Combretastatin congeners D-2 congeners, named isocorniculatolide A and 11-O-methyl corniculatolide A were isolated from Indian mangrove plants.
- As a part of our ongoing research in synthesizing the Biologically important Natural Products, here we are reporting First total synthesis of newly isolated isocorniculatolide A and 11-O-methyl corniculatolide A

SYNTHETIC SCHEMES



Scheme: 1



Scheme: 2

MATERIALS:

- 3, 4 dihydroxy benzaldehyde, Isovannillin, 4-bromobenzaldehyde, BnBr, Pd/C, Copper DMS complex were purchased from sigma.
- Methyl copper was prepared in house as per the literature.
- All organic solvents were purchased from Rankem Chemicals.

RESULTS AND DISCUSSIONS:

- Concise total synthesis of isolated isocorniculatolide A and 11-O-methyl corniculatolide A was accomplished.
- isocorniculatolide A was synthesized starting from 3,4 dihydroxy benzaldehyde and Isovannillin.
- 11-O-methyl corniculatolide A was synthesized starting from Isovannillin.

CONCLUSION:

- First total synthesis of newly isolated isocorniculatolide A and 11-O-methyl corniculatolide A was achieved.

ACKNOWLEDGEMENT:

- The authors wish to express their gratitude to the management of Evolva Biotech Pvt. Ltd, Chennai, India for providing necessary facilities to carry out the research work.

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