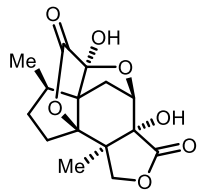
Molecule of the week: (–)-Jiadifenolide

Isolation and bioactivity



(–)-jiadifenolide

- First isolated from dried pericaps of *Illicium jiadifengpi*. (0.00001% yield)

OL **2009**, *11*, 5190

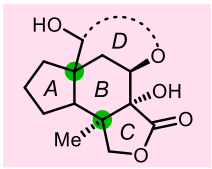
One of the most recognised *Illicium* genus species: *I. verum* (star anise)

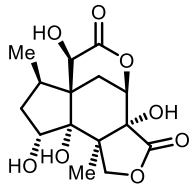
- Non-peptide neurotrophic agent (useful in treatment of Alzheimer's disease).
- Not extensively studied due to absence of large quantities source.

Isolation of 1 g of 1 would require 117 kilograms of I. jiadifengpi pericarps (dry weight), one 226 kilogram silica gel column, two more silica gel columns of unspecified relative size, and preparative HPLC separation.

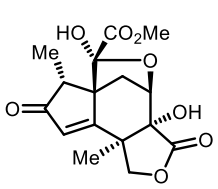
NC **2015**, 7, 604

Majucin type common scaffold

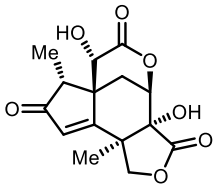




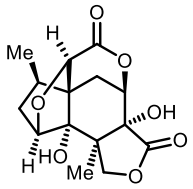
Majucin



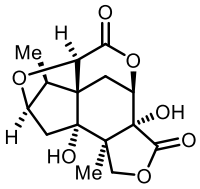
(–)-jiadifenin



(–)-ODNM



(–)-jiadifenoxolane A



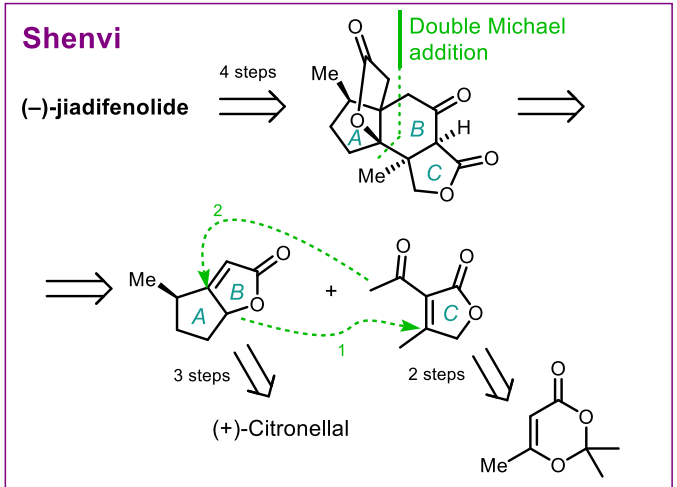
(–)-jiadifenoxolane B

Reported syntheses

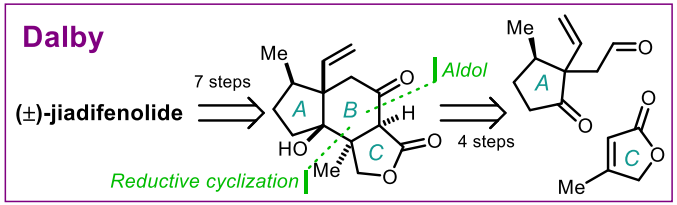
- 4 total syntheses have been reported to date (* = asymmetric synthesis)

Group	Citation	Steps LLS (Tot)	Yield mg	Yield %
Theodorakis *	*ACIE* **2011**, *50*, 3672 *CEJ* **2013**, *19*, 6398	25	5	1.5
Dalby	*ACIE* **2014**, *53*, 7286	23	5	1.5
Sorensen *	*ACIE* **2014**, *53*, 5332	17	9	1.5
Shenvi *	*NC* **2015**, *7*, 604	**8 (10)**	**1030**	**9.2**

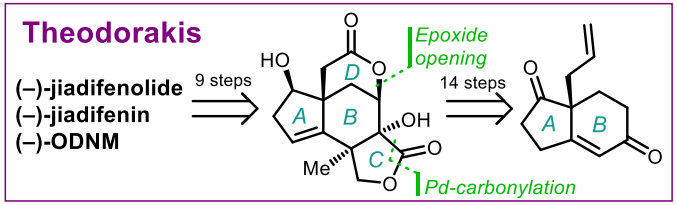
Shenvi



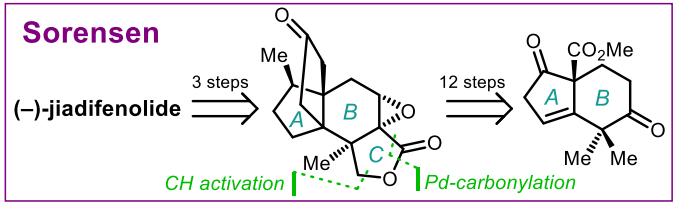
Dalby



Theodorakis



Sorensen



ACIE = Angewandte Chemie International Edition, *CEJ* = Chemistry – a European Journal, *OL* = Organic Letters, *NC* = Nature Chemistry

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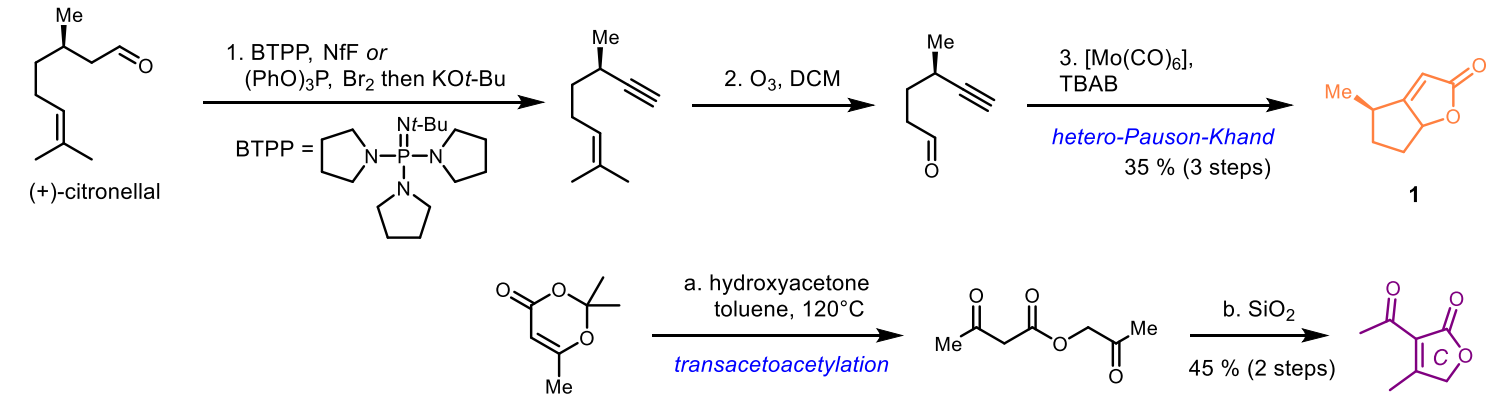
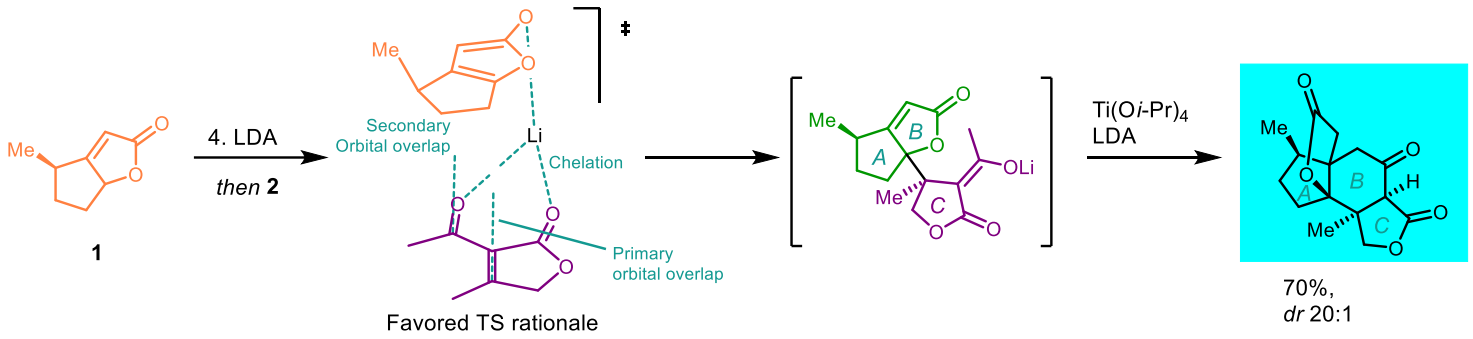
Syntheses of starting materials



Double Michael addition



Final steps of the synthesis