

Tetrahedron

Volume 68, Issue 24, 17 June 2012, Pages 4906–4918

## Two versatile routes towards Cerpegin and analogues: applications of a one pot reaction to new analogues of Cerpegin

Didier Villemin, Nawel Cheikh, Liang Liao, Nathalie Bar, Jean-François Lohier, Jana Sopkova,  
Noureddine Choukchou-Braham, Bachir Mostefa-Kara

### Abstract :

Simple and efficient routes to the natural alkaloid Cerpegin and new analogues are described herein. In a first approach, we extend the scope of a one pot three steps reaction, which permits the synthesis of new analogues of Cerpegin, substituted in different ways. In a second line of approach, we present an unprecedented synthesis of Cerpegin and analogues where methylfuranones are condensed with dimethylformamide diethylacetal (DMFDEA) to yield enamino-lactone esters, which react easily with various primary amines affording Cerpegin and new analogues. We applied this second approach to the synthesis of new bis-Cerpegins and N-amino-Cerpegins. Most of the syntheses are performed under environmental friendly conditions.

### Keywords:

Cerpegin; Enamines; 2-(5H)-Furanones; Bis-butenolides; Solvent-free conditions.

Source: <http://www.sciencedirect.com/science/article/pii/S0040402012003985>