

1 Article

2 **Essential oils of five *Baccharis* species: investigations**
 3 **on the chemical composition and biological activities**

4 Jane M. Budel ^{1,2*}, Mei Wang ², Vijayasankar Raman ², Jianping Zhao ², Shabana I. Khan ², Junaid
 5 U. Rehman ², Natascha Techen ², Babu Tekwani ², Luciane M. Monteiro ¹, Gustavo Heiden ⁴, Inês
 6 J. M. Takeda ⁵, Paulo V. Farago ¹ and Iklas A. Khan ²

7 ¹Departamento de Ciências Farmacêuticas, Universidade Estadual de Ponta Grossa (UEPG), Ponta Grossa,
 8 PR, Brasil; janemanfron@hotmail.com; lmmonteiro@hotmail.com; pvfarago@gmail.com

9 ²National Center for Natural Products Research, School of Pharmacy, University of Mississippi, University,
 10 MS, USA; meiwang@olemiss.edu; vraman@olemiss.edu; jianping@olemiss.edu; skhan@olemiss.edu;
 11 jurheman@olemiss.edu; ntechen@olemiss.edu; btekwani@olemiss.edu

12 ³Embrapa Clima Temperado, Pelotas, RS, Brasil; gustavo.heiden@embrapa.br

13 ⁴Departamento de Meio Ambiente, Universidade Estadual de Maringá (UEM), Umuarama, PR, Brasil;
 14 takedaines@bol.com.br

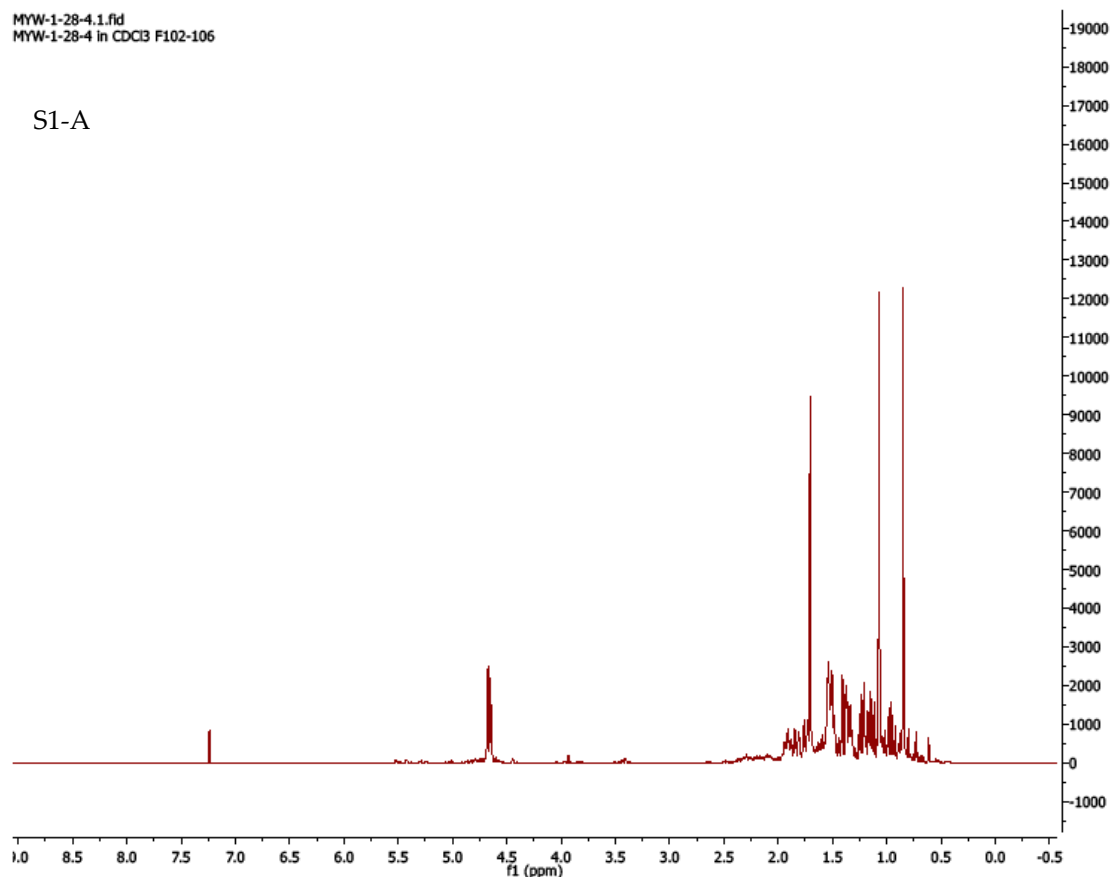
15 * Correspondence: janemanfron@hotmail.com; Tel.: +554133203000

16 Received: date; Accepted: date; Published: date

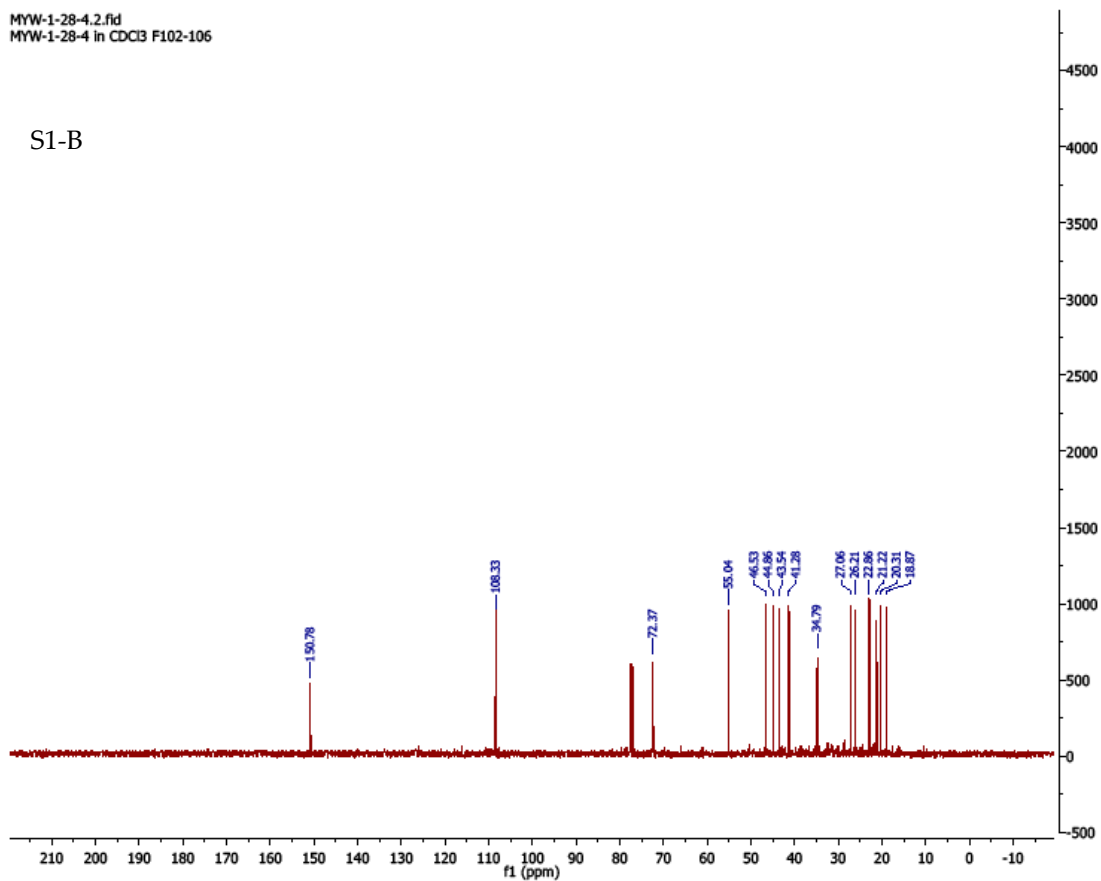
17

MYW-1-28-4.1.fid
 MYW-1-28-4 in CDC3 F102-106

S1-A



18



19

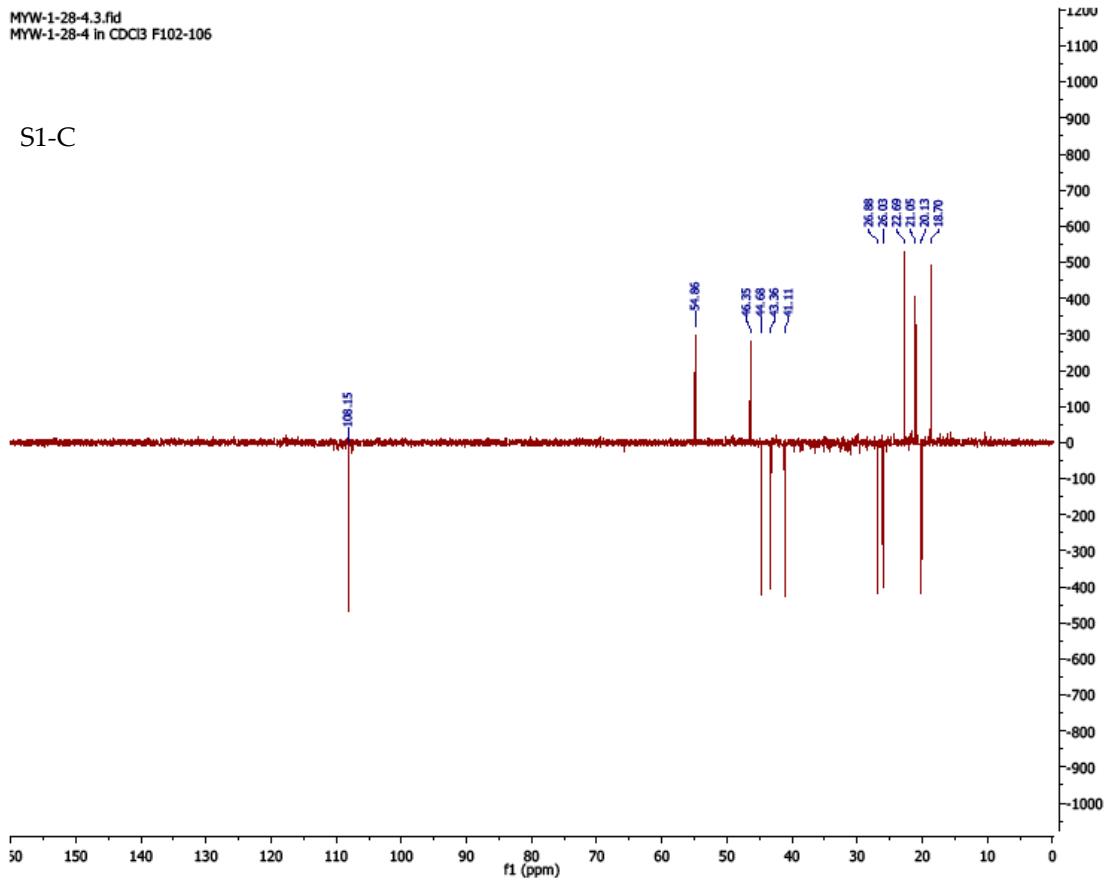
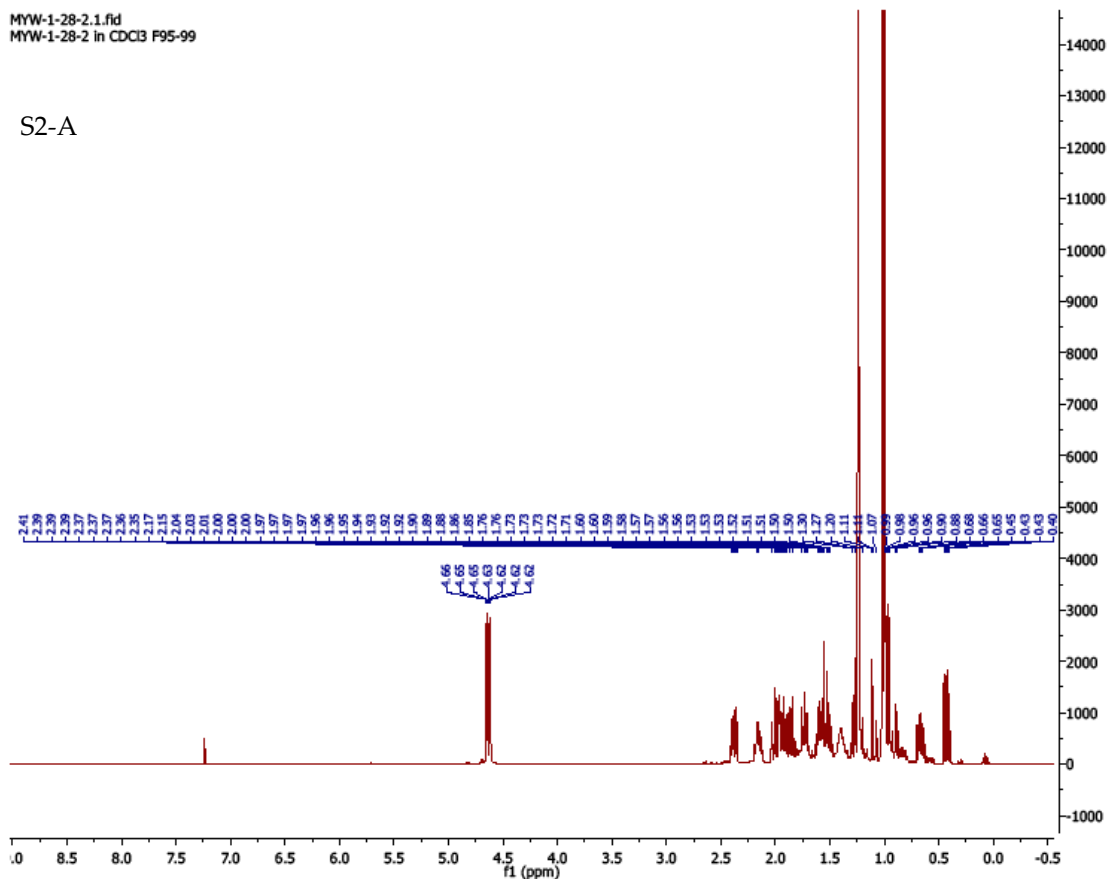
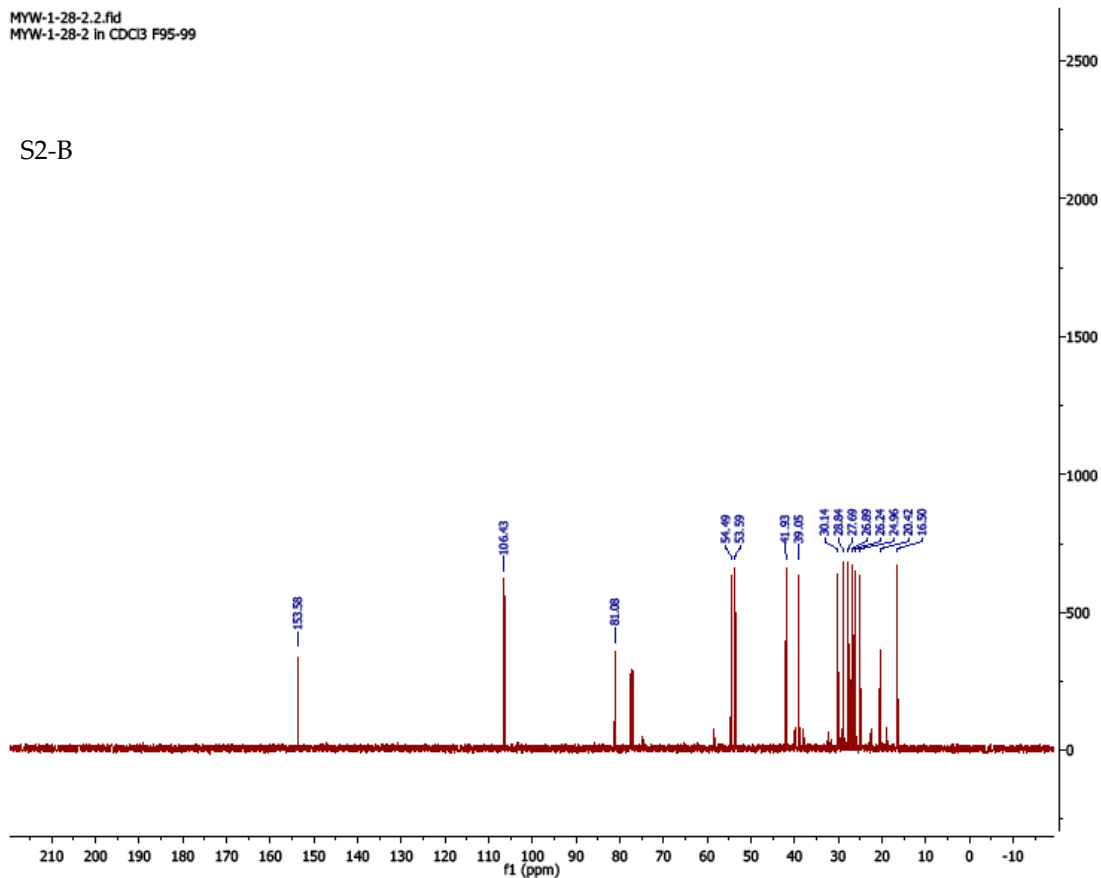
20
21

Figure S1. Proton and Carbon NMR spectra of kongol



22



23

24

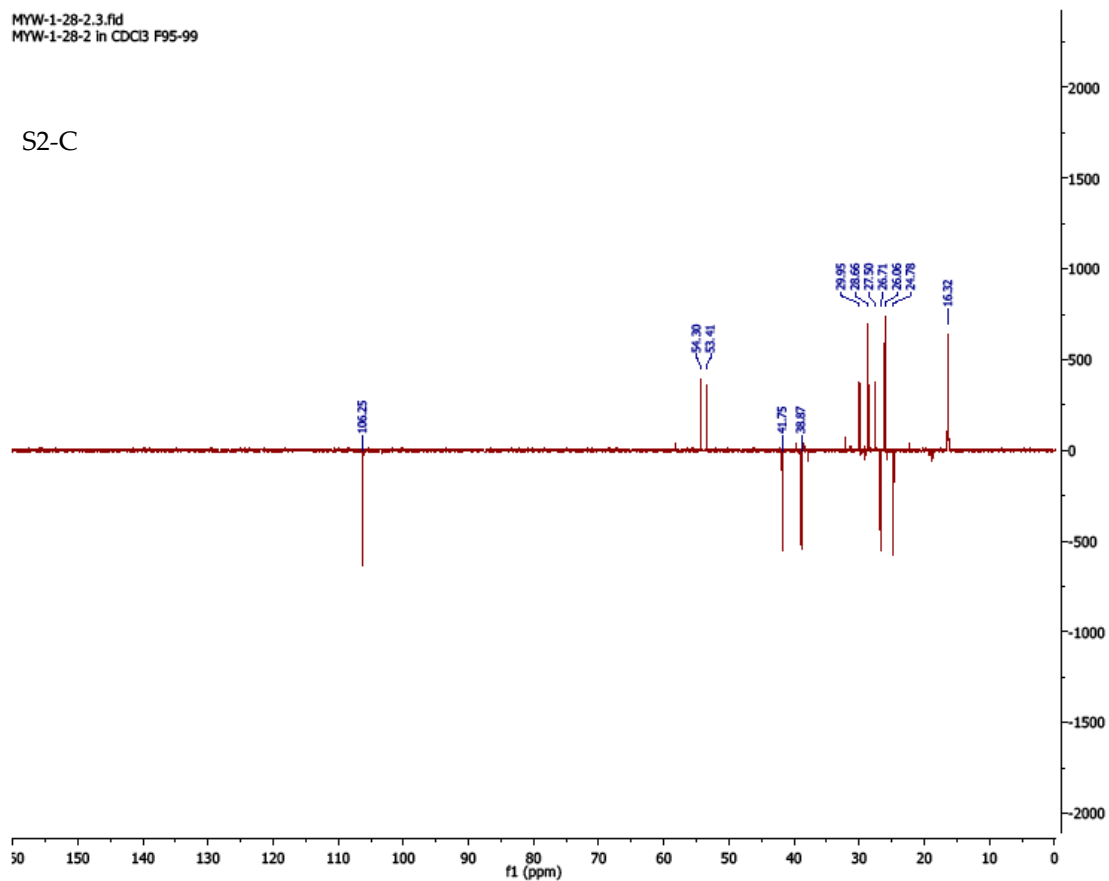


Figure S2. Proton and Carbon NMR spectra of spathulenol



© 2018 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

25
26
27

30