SUPPLEMENTARY MATERIAL

New Bioactive labdane diterpenoids from *Marrubium aschersonii*

Saoussen Hammami^a, Zhenzhen Li^b, Mingjie Huang^b, Ridha El Mokni^c, Hatem Dhaouadi^a, and Sheng Yin^{b*}

^aResearch Unit Applied Chemistry and Environment 13ES63, Monastir University, Faculty of Sciences of Monastir, 5000 Monastir, Tunisia

^bSchool of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou, Guangdong 510006, China

^cLaboratory of Botany and plant Ecology, Faculty of Sciences, University of Bizerta, Jarzouna, 7021, Bizerta, Tunisia

*Corresponding author. Email: yinsh2@mail.sysu.edu.cn

Abstract: A phytochemical investigation of the ethanol extract of *Marrubium aschersonii* Magnus (Lamiaceae) collected from Tunisia led to the isolation and identification of two new labdane diterpenoids, marrubaschs A (**1**) and B (**2**), along with two known compounds (**3** and **4**). Their structures were elucidated by spectral methods including HRESIMS and NMR techniques. All compounds were evaluated for their inhibitory effects on the nitric oxide (NO) production induced by lipopolysaccharide (LPS) in RAW 264.7 macrophage cells. Compound **2** exhibited weak inhibition of NO production with the IC₅₀ value of 35 ± 1.0 µM.

Key words: *Marrubium aschersonii*; labdane diterpenoids; anti-inflammatory activities

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S1. ^1H NMR (400 MHz, CD_3OD) spectrum of marrubasch A (**1**)

S2. ^{13}C NMR (100 MHz, CD_3OD) spectrum of marrubasch A (**1**)

S3. ^1H - ^1H COSY spectrum of marrubasch A (**1**) in CD_3OD

S4. HSQC spectrum of marrubasch A (**1**) in CD_3OD

S5. HMBC spectrum of marrubasch A (**1**) in CD₃OD

S6. NOESY spectrum of marrubasch A (**1**) in CD₃OD

S7. Structure of leoleorin A.

leoleorin A

S8. HRESIMS spectrum of marrubasch A (1)

ymaz-22 #374 RT: 2.99 AV: 1 NL: 7.70E6
T: FTMS + p ESI Full ms [200.00-600.00]

S9. Selected ^1H - ^1H COSY (—) and HMBC (→) correlations of marrubasch A (**1**)

S10. Selected NOESY (↔) correlations of marrubasch A (**1**)

S11. ^1H NMR (400 MHz, CDCl_3) spectrum of marrubasch B (**2**)

S12. ^{13}C NMR (100 MHz, CDCl_3) spectrum of marrubasch B (**2**)

S13. ^1H - ^1H COSY spectrum of marrubasch B (**2**) in CDCl_3

S14. HSQC spectrum of marrubasch B (**2**) in CDCl_3

S15. HMBC spectrum of marrubasch B (**2**) in CDCl₃

S16. NOESY spectrum of marrubasch B (**2**) in CDCl₃

S17. HRESIMS spectrum of marrubasch B (2)

ymaz-16 #362 RT: 2.89 AV: 1 NL: 1.41E7
T: FTMS +p ESIFull ms [200.00-600.00]