SUPPLEMENTARY MATERIAL

Gracilone, a new sesquiterpene lactone from *Tanacetum gracile* (Tansies)

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Supplementary information

Abstract

The methanolic extract of the Tanacetum gracile afforded the isolation of new sesquiterpene lactone, named gracilone (1) along with four known compounds as 14α-taraxeran-3-one (2), 14α-taraxeran-3-ol (3), apigenin (4) and β-sitosterol (5). The structure of compound 1 was elucidated on the basis of 1D, 2D NMR and MS spectroscopic analysis. Antimicrobial, antioxidant and anticancer activities of all compounds were evaluated, from which gracilone (1) showed a moderate antibacterial activity, while as apigenin (4) showed comparatively more antibacterial activity against both gram- positive and gram-negative tested strains.

Keywords: Tanacetum gracile; Gracilone; Antibacterial; Antioxidant; Anticancer activity
Supplementary information

**Fig. S1:** Structure of compounds (2-5)
Fig. S2 Significant 2D NMR correlations of compound 1
Fig. S3: $^1$H-NMR of compound 1
Fig. S4: $^{13}$C-NMR of compound 1
Supplementary information

Fig. S5: DEPT 135° of compound 1
Fig. S6: $^1$H–$^1$H COSY of Compound 1
Supplementary information

Fig. S7: HSQC of Compound 1
Fig. S8: HMBC of Compound 1
Supplementary information

Fig. S3: ESI-MS of compound 1

Fig. S9: Mass of Compound 1
Fig. S10: IR of compound 1