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Anticandidal, antibacterial, cytotoxic and antioxidant activities of *Calendula arvensis* (CA) flowers

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Calendula arvensis (CA) is one of the important plants used in traditional medicine in Morocco, due to its interesting chemical composition. The present study aimed to determine the anticandidal, antioxidant and antibacterial activities, and the effects of extracts of CA flowers on the growth of myeloid cancer cells. Also, to characterize the chemical composition of the plant. Flowers of CA were collected based on ethnopharmacological information from the villages around the region Rabat-Khemisset, Morocco. The hexane and methanol extracts were obtained by soxhlet extraction, while aqueous extracts were obtained by maceration in cold water. CA extracts were assessed for antioxidant activity using four different methods (DPPH, FRAP, TEAC, b-carotene bleaching test). Furthermore, the phenolic and flavonoid contents were measured; also the antimicrobial activity has been evaluated by the well diffusion method using several bacterial and fungal strains. Finally, extracts cytotoxicity was assessed using MTT test. Phytochemical quantification of the methanolic and aqueous extracts revealed that they were rich with flavonoid and phenolic content and were found to possess considerable antioxidant activities. MIC values of methanolic extracts were 12.5–25 mg/mL. While MIC values of hexanolic extracts were between 6.25–12.5 mg/mL and were bacteriostatic for all bacteria while methanolic and aqueous extracts were bactericidal. In addition, the extracts exhibited no activity on *Candida* species except the methanolic extract, which showed antifungal activity on *Candida tropicalis* 1 and *Candida famata* 1. The methanolic and aqueous extracts also exhibited anti-myeloid cancer activity (IC₅₀ of 31 mg/mL). In our study, we conclude that the methanolic and aqueous extracts were a promising source of antioxidant, antimicrobial and cytotoxic agents.

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