

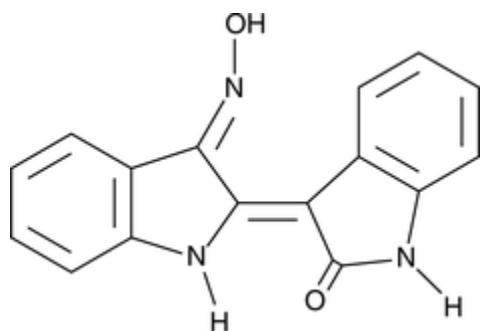
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Xanthine oxidase/tyrosinase inhibiting, antioxidant, and antifungal oxindole alkaloids from *Isatis costata*.

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Abstract



Phytochemical investigations on the ethyl acetate soluble fraction of the whole plant of *Isatis costata* Linn. (Brassicaceae) led to the isolation of the oxindole alkaloids costinones A (1), B (2), isatinones A (3), B (4), indirubin (5), and trisindoline (6). Compounds 1-6 displayed significant to moderate inhibition against xanthine oxidase enzyme with IC₅₀ values ranging from 90.3±0.06 to 179.6±0.04 microM, whereas the standard inhibitor of xanthine oxidase (allopurinol) had an IC₅₀ value of 7.4±0.07 microM. Compounds 1 (IC₅₀ 7.21±0.05 microM), 2 (IC₅₀ 9.40±0.03 microM), 3 (IC₅₀ 11.51±0.07 microM), 4 (IC₅₀ 12.53±0.06 microM), 5 (IC₅₀ 14.29±0.09 microM), and 6 (IC₅₀ 17.34±0.04 microM) exhibited pronounced activities when compared with the standard tyrosinase inhibitor L-mimosine (IC₅₀ 3.70±0.03 microM), along with DPPH radical scavenging activity with IC₅₀ 226, 270, 300, 320, 401, and 431 microM, respectively. The crude extract and compounds 1, 2, 5, and 6 showed significant antifungal activity against *Trichophyton schoenleinii*, *Aspergillus niger*, *Candida albicans*, *Trichophyton simii*, and *Macrophomina phaseolina*.

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