p-Terphenyl Compounds Possessing Antioxidative Activity from Japanese Inedible Mushrooms

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We are continuing to study biologically active substances from inedible mushrooms. In this paper, we report 36 new *p*-terphenyl compounds possessing antioxidative activity from fruit bodies of four Japanese inedible fungi named *Thelephora aurantiotincta* Corner, *T. terrestris* Ehrn., and *Hydnellum caeruleum* (Hornem.)P.Karst., belonging to Thelephoraceae; and *Paxillus curtisii* Berk., belonging to Coniophoraceae. Eight new *p*-terphenyl compounds, thelephantins A–H (1–8) (Quang et al., 2003a,b) and five known compounds—atromentin, 2-*O*-methylatromentin, gabajunins C and E, and thelephorin A—were isolated from *T. aurantiotincta*. Eight new *p*-terphenyl compounds—thelephantins I-P (9–16) (Quang et al., 2004) together with two known compounds, 2-*O*-methylatromentin and dihydroaurantiacin—were isolated from *H. caeruleum*, seven new *p*-terphenyl derivatives—terrestrins A–G (17–23) and two new pregnane-type steroids, terrestrones A and B (24, 25) from *T. terrestris*. In addition, 13 new *p*-terphenyl derivatives named curtisians E–Q (26–38) (Quang et al., 2003c–e) along with two known compounds—curtisians C and D–were also obtained from *P. curtisii*. These absolute structures were determined by 2D NMR, MS, IR, and UV spectra, X-ray crystallographic analysis, and chemical reactions.

Antioxidative activities of these new *p*-terphenyl compounds were evaluated by diphenyl-*p*-picryhydrazyl (DPPH) radical scavenging effects. Some new *p*-terphenyl compounds showed equivalent or strong activities compared with vitamin C, α-tocopherol, and BHA (tert-butylhydroxyanisole).

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