Two new Penicillium species Penicillium buchwaldii and Penicillium spathulatum, producing the anticancer compound asperphenamate.

Penicillium buchwaldii sp. nov. (type strain CBS 117181(T) = IBT 6005(T) = IMI 30428(T) ) and Penicillium spathulatum sp. nov. (CBS 117192(T) = IBT 22220(T) ) are described as new species based on a polyphasic taxonomic approach. Isolates of P. buchwaldii typically have terverticillate conidiophores with echinulate thick-walled conidia and produce the extrolites asperphenamate, citreoisocoumarin, communesin A and B, asperentin and 5’-hydroxy-asperentin. Penicillium spathulatum is unique in having restricted colonies on Czapek yeast agar (CYA) with an olive grey reverse, good growth on CYA supplemented with 5% NaCl, terverticillate bi- and ter-ramulate conidiophores and consistently produces the extrolites benzomalvin A and D and asperphenamate. The two new species belong to Penicillium section Brevicompacta and are phylogenetically closely related to Penicillium tulairense. With exception of Penicillium fennelliae, asperphenamate is also produced by all other species in section Brevicompacta (P. tulairense, Penicillium brevicompactum, Penicillium bialowiezense, Penicillium olsonii, Penicillium astrolabium and Penicillium neocarssum). Both new species have a worldwide distribution. The new species were mainly isolated from indoor environments and food and feedstuffs. The fact that asperphenamate has been found in many widely different plants may indicate that endophytic fungi rather than the plants are the actual producers.

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