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**ISOLATION OF A NEW  $\alpha$ -GLUCOSIDASE INHIBITOR FROM  
A FUNGUS, *PENICILLIUM* SP. F70614**

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The modulation of glycosidase activity by inhibitors is of great interest. Such compounds have been shown to be important tools in mechanistic studies on glycohydrolase as well as having promising therapeutic application. An  $\alpha$ -glucosidase inhibitor was isolated from culture filterates of *Penicillium* sp. The inhibitor was active against  $\alpha$ -glucosidase isolated from yeast and porcine small intestine. However, it showed no inhibition to *Aspergillus*  $\alpha$ -galactosidase, *Escherichia coli*  $\beta$ -galactosidase, and jack bean  $\alpha$ -mannosidase. The inhibitor was highly soluble in ether, methanol and chloroform. The inhibitor was purified using silica gel, Sephadex LH-20 column chromatography and reverse-phase HPLC. The inhibitory compound designated PA-7 ( $IC_{50}=35\mu\text{g}$ ) was obtained as white powder. The structure of PA-7 was determined with spectroscopic data of EI-MS, FAB-MS,  $^1\text{H}$ , and  $^{13}\text{C}$  NMR. The inhibitor has a diketopiperazine moiety.