

Rice plants accumulate various specialized metabolites, including phenylamides, in response to pathogen attack. We prepared 25 phenylamides, and developed a method of analyzing them by multiple reaction monitoring with liquid chromatography coupled with tandem mass spectrometry. We analyzed phenylamides in rice leaves infected with *Cochliobolus miyabeanus* and *Xanthomonas oryzae*. The phenylamides induced included benzoyltryptamine, cinnamoyl-, *p*-coumaroyl-, feruloyl-, and benzoylserotonins, cinnamoyl and benzoyltyramines, feruloylagmatine, and feruloylputrescine. Some of the phenylamides exhibited antimicrobial activity against *C. miyabeanus* and *X. oryzae*, indicating that they are phytoalexins. Treatment with jasmonic acid, salicylic acid, 6-benzylaminopurine, and ethephone also induced phenylamide accumulation. The compositions of the induced amides varied depending on the plant hormone used, and cinnamoyltryptamine, cinnamoylserotonin, and cinnamoyltyramine were not induced by the plant hormones. These findings suggest that several plant hormones and additional factors are involved in phenylamide accumulation in response to pathogen infection in rice.