Plants open stomata to facilitate gas exchange required for photosynthesis, but microbial pathogens take advantage of stomata to intrude into plants. Plants close stomata upon recognizing microbe-associated molecular patterns (MAMPs) thereby restricting pathogen entry. The foliar bacterial pathogen Pseudomonas syringae pv. tomato DC3000 (Pto) produces coronatine (COR), a structural mimic of bioactive jasmonate (JA), to inhibit MAMP-triggered stomatal closure for invasion. However, the molecular mechanism by which COR inhibits stomatal closure remains unclear. Here, I found that stomatal invasion by Pto requires CYP707A1, which encodes an abscisic acid (ABA)-catabolizing enzyme and is predominantly expressed in guard cells in the model Brassicaceae plant Arabidopsis thaliana. Pto induced CYP707A1 expression dependently on COR and COI1 encoding the plant JA receptor. The induction of CYP707A1 by COR is directly regulated by and requires the major transcriptional regulator of JA signaling MYC2. Importantly, CYP707A1 was essential for COR to inhibit stomatal closure triggered by the MAMP flg22, ABA, and salicylic acid. Furthermore, Pto required CYP707A1 to reopenn stomata and to invade leaves via stomata. These results indicate that Pto exploits the host JA-COI1-MYC2-CYP707A1 pathway for stomatal invasion in A. thaliana. Interestingly, comparative analysis of Brassicaceae species revealed that COR inhibits stomatal closure and Pto reopens stomata of Arabidopsis lyrata and Cardamine hirsuta but not Capsella rubella and Eutrema salsugineum, albeit that all of these Brassicaceae species possess CYP707A1. The pattern for the ability of COR to inhibit stomatal closure was incongruent with their phylogenetic relationship: i.e. A. thaliana is more closely related to C. rubella than C. hirsuta, implying that C. rubella and E. salsugineum have independently lost the functional JA-CYP707A1 pathway. This loss provided plants with an advantage against this host exploitation by Pto. Thus, C. rubella and E. salsugineum are resistant against COR-mediated stomatal invasion by Pto in contrast to the other tested Brassicaceae species such as A. thaliana. Noteworthy, I found that A. thaliana, A. lyrata, and C. hirsuta, in which COR mediates stomatal opening, fully open stomata in the morning within one hour after light turned on when CYP707A1 expression is transiently induced. On the other hand, C. rubella and E. salsugineum wild-type plants as well as A. thaliana mutants defective in JA and CYP707A1, which were resistant against COR-mediated stomatal opening, showed delayed stomatal opening in the morning. Together, I propose an evolutionary tradeoff at stomatal aperture regulation: JA-mediated ABA catabolism via CYP707A1 allows plants to rapidly open stomata in the morning, which likely contributes to photosynthesis and plant growth, but it has an undesirable effect that is being exploited by pathogens. Considering that various leaf-infecting pathogens activate JA signaling by various means, this Brassicaceae JA-CYP707A1 pathway may be under evolutionary selection arising from pathogen pressure.