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13.1 Develop promoters that will prevent expression of foreign genes in fruit

Gurley W.B., Busot G. and O'Grady K.

Department of Microbiology and Cell Science, University of Florida, Gainesville, FL 32611-0700

Abstract: Efforts are in progress to develop a gene regulatory circuit that represses expression of foreign genes in citrus fruit. This objective fits into the larger plan to engineer citrus to resist or destroy pathogenic Liberibacter, the causal agent of citrus greening. In order to mount a robust defense against infection, plant cells will need to produce significant amounts of anti-bacterial peptides. The impact that these proteins will have on taste of the fruit and juice are unknown. In addition, consumer receptiveness to GMO orange juice is anticipated to be more likely negative than positive. The ability to prevent expression of anti-bacterial peptides in the fruit should greatly lessen the potential negative impacts on taste and consumer acceptance. In the long term, the engineering of stringently regulated gene expression in plants will contribute towards future efforts to genetically modify crop plants for improved nutrition, pathogen resistance and survival to the extremes of the environment.