

transcriptional activator, ToxJ, whose expression is regulated by quorum sensing. We present biochemical evidence to demonstrate that TofR, an octanoyl-L-homoserine lactone receptor, binds to the upstream of *tofI* and *toxJ* promoter regions having *lux*-box like sequences. ToxR binds to the upstream of *toxA* and *toxF* promoter regions having palindromic sequences, T-N11-A, and ToxJ binds to the *toxA* and *toxF* promoter regions. Gel shift assay and DNase I footprinting analysis demonstrate that ToxR and ToxJ function synergistically to activate expression of both *tox* operons and that the transcriptional activators exert their effect by directly binding to the upstream of their promoter regions. Our biochemical evidences demonstrate that ToxJ and ToxR co-activate transcription of *toxABCDE* and *toxFGHI* operons in a synergistic manner.

B-19 Bacterial Leaf Spot and Dry Rot of Lettuce Caused by *Xanthomonas campestris* pv. *Vitians*. Seungdon Lee, Jeonghee Lee, Hyun-Kyung Kim, Sunggi Heu and Dong-Soo Ra. Plant Pathology Division, National Institute of Agricultural Science and Technology, Suwon 441-707, Korea

During 1997 and 1998, a new disease of lettuce (*Lactuca sativa*) was observed on greenhouse-grown plants in Kwangju, Kwangmyung and Hoesung. Lesions on leaves were irregular, small, pale green to black, water-soaked, and 2 to 5 mm in diameter. Coalescing lesions sometimes caused defoliation of older leaves. Isolations made from diseased leaves on yeast extract dextrose calcium carbonate agar yielded nearly pure cultures of a yellow pigmented bacterium typical of a xanthomonad. Four bacterial strains were purified and used for further tests. Pathogenicity of strains was confirmed on 5-week-old lettuce plants injected with bacterial suspensions containing 10^8 cfu/ml of sterile water. The representative *Xanthomonas* strains isolated from lettuce were compared with a reference strain *X. campestris* pv. *vitians* for fatty acid profiles, metabolic fingerprints and 16s rDNA sequences, showing that all outcomes were indistinguishable between the representative and reference strains. The bacterium grew well between 18 and 33 °C, but optimum temperature was 30 °C on LB broth. This is the first report of bacterial leaf spot of lettuce in Korea.

B-20 Bacterial Leaf Spot of English Ivy Caused by *Xanthomonas hortorum* pv. *Hederæ*. Seungdon Lee, Jina Jo, Jeonghee Lee, Kyungsook Han¹, Sang-Tae Seo¹, Hyun-Kyung Kim, Sunggi Heu and Dong-Soo Ra. Plant Pathology Division, National Institute of Agricultural Science and Technology, Suwon 441-707, Korea. ¹Horticultural Environment Division, National Horticultural Research Institute