F304 Genetic characterization of *Fusarium oxysporum* f. sp. using RAPD

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We used RAPD based on PCR to assess genetic relationship among thirteen strains of *Fusarium oxysporum* formae speciales. In order to select proper primer to fit *F. oxysporum* f. sp., 100 arbitrary primers of 10 bases were tested. The reaction products were electrophoresed, and the molecular-size markers used 1-kb ladder. Most RAPD primers generally reacted with thirteen strains and all amplification products revealed scorable polymorphisms among the strains. For example, reactions with primer OPW-07 producted 2 to 8 amplified DNA bands. The size of amplification products was within the range of 0.5 to 2.3kb. Similarities and differences in banding patterns obtained by RAPD were analyzed.

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RNase H Activity of Human Hepatitis B Virus Polymerase Expressed in *E.coli*.

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Human Hepatitis B Virus (HBV) replication is accomplished by its own DNA polymerase and RNase H activity. We expressed HBV RNase H domain in *E.coli*, purified by affinity purification scheme and characterized. 60KDa fusion protein (MBP 43KDa and HBV RNase H domain 17KDa) was produced and confirmed by *in vitro* activity assay. We determined its optimal enzymatic activity condition. The optimal activity of HBV RNase H domain was observed at 8mM $MgCl_2$ and 16mM $MnCl_2$, respectively. The optimum pH was between 7.4 and 8.3. The monovalent cation requirement was 40mM , but more than 100mM was inhibitory effect to HBV RNase H activity. This result clearly suggests that RNase H activity is separable from viral HBV polymerase enzymatic activity.