C013

Purification and Characterization of the Antifungal Compound from *Bacillus* sp. has an Antagonistic Activity against *Botrytis cinerea*

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The antifungal compound inhibits growth of *Botrytis cinerea* was isolated and purified from *Bacillus* sp. In this experiment, it was isolated by butanol extraction, silica gel column chromatography and thin layer chromatography. Also it had a maximum observation on 204nm of UV spectrum and a 0.26 Rf at 1:1 solvent system of chloroform methanol. Its the physico-chemical properties indicated to be a steroid glycoside. The antifungal compound purified through this study was estimated to ascosteroside.

C014

Light Induced Anticancer Activity of Bacteriochlorine from the Isolated Photosynthetic Bacteria.

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We conducted a series of experiments to develope the light induced anticancer drugs from the isolated purple photosynthetic bacteria and evaluate the efficiency of anticancer activity against cancer cells We isolated some purple photosynthetic bacteria from fresh water using the near infrared light(760nm) source and identified the isolated bacteria using sequencing and RFLP for 16S rDNA genes We extracted bacteriochlorophyll-a by MeOH from isolated bacteria and modified to bacteriochlorine by treating a diethyl ether solution of it with HCl We tested the phototoxicity by MTT assay after administration of the bacteriochlorines and illumination of 760nm LED array The twenty these bacteria were isolated in this experiments The results of the RFLP and sequencing bacterial 16S rDNA gene indicated that dominant species were *Roseobacter* spp, *Rhodobacter* spp and *Rhodopseudomonas* spp IC_{50} value of the bacteriochlorines from *Roseobacter* spp, *Rhodobacter* spp and *Rhodopseudomonas* spp against cancer cells were 0.10$\mu g/m\ell$, 0.12$\mu g/m\ell$ and 0.48$\mu g/m\ell$, respectively These results demonstrated that our bacteriochlorines may have a function as new light induced anticancer drugs

C015

Comparative Genomics for Understanding of Physiological Differences between *Z. mobilis* ZM1 and ZM4

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Z. mobilis ZM1 strain has been showed two fold lower rate of growth, glucose uptake and ethanol production than that of ZM4, but the biomass and the ethanol yield are the same Transcriptomic approaches between *Z. mobilis* ZM1 and ZM4 were tried to analyze these physiological differences on the ethanol production. From the microarray results, some locus were absent in ZM1 which showed high transcription level in ZM4 Based on comparative genomics, several genes which related transport (permease), energy production and transcription regulation (stress and replication specific) were evaluated on ethanol production in ZM1. So, the transcription profiles that will be give some insights into the fundamental informations of physiological phenomenon during ethanol production in *Z. mobilis*

C016

Disruption of *levU* gene in *Zymomonas mobilis* ZM4 using PCR Targeting Method

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Zymomonas mobilis, a facultative anaerobic Gram-negative bacterium, has considerable potential for industrial alcohol production Its fermentable substrate range is restricted to glucose, fructose, and sucrose. Among these substrates, *Zymomonas mobilis* usually tends to produce lower amount of ethanol in sucrose medium than in glucose medium, because levansucrase uses sucrose as a substrate to synthesize levan as a by-product So we disrupted *levU* gene which participates in levansucrase biosynthesis Homologous recombination was induced by transformation of tetracycline resistance cassette into *E coli* containing *levU* cosmid using electrophoration We confirmed that *levU* gene was disrupted successively and constructed cosmid which was used to choose *ΔlevU* mutant strains by trasformation into *Z. mobilis* ZM4 wild type using heat shock method Levansucrase and sucrase gene which is located on downstream of levansucrase are expressed by the same promoter. To remove polar effect from sucrose medium, we subcloned sacC, which encodes sucrase, into pSMF49292 suttle vector using *pstI* enzyme by overlap PCR, and then this was transformed into *ΔlevU* mutant strain