responsive element regulatory protein, CREB-2. Previously, we showed specific interaction between the Nef and CREB-2 by using the in vitro protein binding assay. We showed that the basic leucine zipper carboxy terminal domain of CREB-2 is required for the interaciton with the HIV-1 Nef by using in liquid β-galactosidase assay. And, we demonstrated that CREB-2 cooperates with Nef to enhance viral transcription. Here, we report the construction of the CRE-SEAP reporter plasmid and the stable cell line in Jurkat cell. Using this plasmid investigated the activity of the transfected cells. CREB-2 has the effect on the transcription activity on the pGL2 promoter when we performed the transient transfection assay with Nef and CRE.

E501

Alteration of Glutathione-Ascorbate Cycle in Tomato Seedlings Exposed to Cadmium

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Developmental changes of glutathione-ascorbate cycle in seedlings of tomato (*Lycopersicon esculentum*) exposed to toxic cadmium concentrations (up to 100 mM for 9 days) were investigated. The contents of total protein and thiols in both leaves and roots and total glutathione in leaves increased but the content of total ascorbic acid in leaves was maintained unchanged with cadmium exposure. Further, the ratio of oxidized glutathione (GSSG)/reduced glutathione (GSH) in both leaves and roots increased but the ratio of dehydroascorbate/ascorbate and the activity of glutathione reductase in leaves decreased with cadmium exposure. Our results imply that tomato seedlings exposed to toxic levels of cadmium experience oxidative stress which might be caused by the impaired glutathione-ascorbate cycle resulting from the altered activities of enzymes and the lowered production of antioxidant compounds involved in the oxidation-reduction cycle.

E801

Development of the Screening System for Antagonist of PPAR-γ by Using Yeast Two Hybrid System

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Obesity, an excessive accumulation of adipose tissue, is characterized by an increase in the number or size of adipocyte, or both. Adipocyte is highly specialized cell that play a critical role in energy homeostasis. Adipocyte differentiation is characterized by a coordinate increase in adipocyte-specific gene expression. Recently PPAR-γ was shown to be expressed in an adipose-specific manner and its expression induced early during the course of differentiation of several preadipocyte cell line. PPAR-γ and the retinoid X receptor α (RXRα) form a heteromeric complex that function as a central regulator of adipocyte differentiation. We developed the screening method to search the candidates for the inhibitors of the differentiation of preadipocyte to adipocyte, by using the yeast two hybrid system. The bait and prey were RXR and PPAR-γ, respectively. Using this system, we found several candidates from the culture broth of Streptomyces sp. and some plant extract.

E801

Oxygen Defense Role of Xanthine Dehydrogenase

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It has been proposed the hypothesis that uric acid is an important scavenger of deleterious oxygen species in biological systems. Xanthine dehydrogenase (XDH) catalyzes the oxidation of xanthine to uric acid with concomitant reduction of NAD to NADH. The rosy (ry) gene in Drosophila melanogaster encodes to the XDH. Here, we investigated the oxygen defense role of XDH by examining the sensitivity of ry mutants of Drosophila to reactivr oxygen species (ROS) producing stress (wound, starvation, UV irradiation and NO stress). Our results demonstrate that XDH plays an important role in oxygen defense in vivo system.

E803

Transcriptional Regulation of *Drosophila-raf* Proto-oncogene by Escargot, a Zinc-finger Protein

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The Raf, a cytoplasmic serine/threonine protein kinase, acts as an important mediator of signals involving cell proliferation, differentiation and development. In previous study, through the yeast one hybrid screening for transcriptional regulator of the *D-raf* proto-oncogene, several cDNA clones including Escargot were isolated. Escargot is a zinc-finger type transcription factor with high affinity for G/ACAGGTG. Escargot is known to be required to maintain a high level of G_2/M that actively inhibits the entry into S phase. In this study, whether Escargot really binds to *D-raf* promoter region and regulates the expression of *D-raf* gene were examined. Gel mobility shift assays using glutathion *S*-transferase fusion proteins and Kc cell nuclear extracts showed that Escargot actually binds to *D-raf* promoter region. Increase of *D-raf* promoter activity by Escargot were demonstrated *in vitro* and *in vivo*. Our data suggest that the expression of *D-raf* gene is regulated by transcription factor Escargot.

E804

Nitric Oxide Downregulates the Expression of Cell Proliferation-Related Genes, PCNA and E2F in *Drosophila* Gut

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Nitric Oxide (NO) is a diffusible multifunctional second messenger that has been implicated in numerous physiological function in mammals, ranging from dilation blood vessels to immune response and potentiation of synaptic transmission. NO has been reported both to inhibit and to promote cell preliferation. Here we investigated effect of NO on the expression of cell proliferation-related genes PCNA and E2F which are expressed in proliferating cells and repressed in quiescent cells. For this purpose, we first examined the expression patterns of PCNA and E2F genes in gut using transgenic *lacZ* reporter lines. And we examined effects of NO on the expression of PCNA and E2F through X-gal staining of NO treated gut of larvae and adults and CPRG assay. Our results show that nitric oxide downregulates the expression of cell proliferation-related genes PCNA and E2F