

cytoplasm throughout the cell cycle, but exhibited dynamic changes in distribution, depending on the cell cycle stage. Such dynamic behavior of Nek2 suggests that Nek2 may be a mitotic regulator that is involved in diverse cell cycle events.

D129 Effects of High Molecular Weight WaterSoluble Chitosan During In Vitro Fertilization and Early Embryogenesis in Mice Fed a High-Fat Diet

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High molecular weight watersoluble chitosan (WSC) with an average molecular weight of 300 kD and a deacetylation level of over 90% can be produced using a simple multistep membrane separation process. It is known that WSC prevents obesity induced by a high-fat diet. The goal of this study was to determine if WSC improved ovarian dysfunction caused by obesity in mice. Mice were fed a high density protein and lipid diet for 4 weeks and administered with 480 mg/kg of WSC for 4 days. The effects of this treatment on weight change, ovulation rate, *in vitro* and *in vivo* fertilization, embryonic development and implantation rate were monitored. The body weight of obese mice fed a highfat diet was markedly reduced by treatment with WSC, but the body weight of mice fed a normal diet was not affected. WSC had significant effects on ovulation rate, *in vitro* and *in vivo* fertilization rates and embryo development, but not on implantation rates. These data suggest that WSC might improve ovarian and oviduct function in obese mice fed a highfat diet, by adjusting internal secretions and metabolic functions.

D130 Effect of Electroacupuncture on the Regeneration of Injured Sciatic Nerve

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To confirm the effect of electroacupuncture on the regeneration of injured sciatic nerve, the change of evoked potential value, the change of acid phosphatase activity in the spinal cord, and morphological change of injured sciatic nerve were examined comparatively in acupuncture group(AG) and control group(CG) after sciatic nerve of guinea pig was injured by purpose. The value of evoked potential after injury of the sciatic nerve was increased in both AG and CG, but the increase rate of that was higher in AG than CG. Acid phosphatase activity of the spinal cord was increased in 1CG and 2AG, but shown are tendency to return to the normal state as time went by. Ultrastructural recovering rate of the injured sciatic nerve was higer in AG than CG. Also, there was developed only adipose tissue in sciatic nerve of AG. As mentioned above, the effect of electroacupuncture on the regeneration of injured sciatic nerve was confirmed experimentally by change of evoked potential, acid phosphatase and ultrastructure. Especially, the effect of electroacupuncture was appeared clearly in an early stage than other treatment stages.

D201 애기장대(Arabidopsis thaliana) 잎 절편에서 NAA와 BA에 의한 Shoot, 부정근, 모용 및 캘러스 형성시의 Determination Time

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애기장대(Arabidopsis thaliana)의 생체종인 'Nossen'의 잎 절편을 이용, 식물생장조절물질이 식물 기관 재분화 양상과 기관 재분화를

결정하는 determination time을 조사하기 위하여 auxin계 식물생장조절물질인 NAA와 cytokinin계인 benzyladenine(BA)을 단독 또는 혼용 처리하여 묘조, 부정근, 모용 및 캘러스 형성 양상을 조사한 다음, 적정 농도의 NAA와 BA에서 묘조, 부정근, 모용 및 캘러스 형성이 결정되는 시간을 조사하였다. 0.05 mg/L NAA와 25 mg/L BA 혼용 처리구에서 약 12개로 가장 많은 묘조가 형성되었으며, 이러한 혼용처리구에서 묘조, 부정근, 모용 및 캘러스가 형성되었으나 0~100 mg/L NAA 단독 처리시에는 부정근, 모용, 그리고 캘러스를 단독 또는 중복으로 관찰할 수 있었다. 저농도의 NAA가 부정근 형성을 촉진하다가 농도가 증가하면서 부정근이 짧아지면서 모용을 형성하였으며, 고농도 NAA 처리시 캘러스가 형성되었다. 모용은 부정근이나 캘러스 유도 과정에서 식물생장조절물질의 조합에 따라 다양하게 나타나 20 mg/L NAA에서 가장 많은 유도를 보였으며, 캘러스는 NAA의 농도가 증가함에 따라 유도되기 시작하여 100 mg/L NAA에서 가장 많은 형성을 보였다. 한편, 기관 형성 시간인 determination time은 NAA와 BA 혼용처리에 의한 묘조 형성에는 14일이었으며, 부정근의 경우는 4일, 모용은 6일, 캘러스는 18일로 나타났다.

D202 강원도 자생

패랭이꽃(*Dianthus*)속의 수집, 분류 및 화훼품종화

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패랭이꽃(*Dianthus*)속은 석죽과(Caryophyllaceae)에 속하는 다년생 식물로서, 대개 낮은 지대의 산과 들에서 자라는 식생을 갖고 있었다. 본 연구는 패랭이꽃속을 기내배양하여 형질개량에 응용하기 위한 전단계로서, 기내(*in vitro*)에서의 안정된 식물체 육성과 캘러스를 유도하여 패랭이꽃속의 화훼품종화를 위해 패랭이꽃속의 기내배양체의 특성을 밝히고자 하였다. 강원도 분포 패랭이꽃속은 춘천과 고성에서 *D. chinensis*와 *D. superbus*의 집단 서식지가 발견되었으며, 구름패랭이, 갯패랭이, 섬패랭이꽃, *D. alpinus*, *D. anatolicus*, *D. arenarius*, *D. amurensis*, *D. barbatus*, *D. caryophyllus*, *D. deltoides*, *D. gratianopl*, *D. myrtinervius*, *D. monspessulanus*, *D. nardiformis*, *D.*

*plumarius*로 현재까지가 17종이 확보되어 기내배양식물로 육성하였다. *D. alpinus*, *D. arenarius*, *D. deltoides*, *D. myrtinervius*, *D. plumarius*의 옆조직으로 부터 캘러스유도는 2,4-D가 첨가된 MS 배지에서 양호하였고, *D. deltoides*, *D. myrtinervius*에서 유도된 배발생캘러스는 $21.5 \text{ E.m}^{-2} \cdot \text{s}^{-1}$ 의 광조건, 2,4-D가 2.0 mg/L 첨가된 MS 배지에서 비교적 잘 증식하였다. *D. superbus*, *D. alpinus*, *D. arenarius*, *D. barbatus*, *D. deltoides*, *D. plumarius*, *D. myrtinervius*의 줄기절편체에서 캘러스유도는 BAP와 NAA보다는 2,4-D가 1.0 mg/L가 포함된 MS배지에서 *D. superbus*, *D. alpinus*, *D. arenarius*, *D. deltoides*의 캘러스증식이 가장 양호하였으며 광조건이 암조건보다는 캘러스증식이 다소 나았다.

D203 Expression Profiling of Differentially Regulated Genes during the Development of Grape Berry Skin

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To isolate and characterize differentially regulated genes during the development of grape berry skin, a subtractive suppression hybridization (SSH) was carried out with mRNA obtained from berry skins and fleshes and about one hundred putative cDNA clones were obtained. We confirmed the skin-specificity of their expression by reverse northern and northern blot analysis and finally selected three clones. The nucleotide sequence of these three clones revealed that they encode leucoanthocyanidine dioxygenase (LDOX), class IV endochitinase and SRC I, respectively. To further investigate the expression pattern of these genes during the berry skin development, we prepared total RNA from grape berry skin and fleshes at the different stages and performed northern blot analysis. LDOX-encoding gene was expressed almost evenly at the different stages in berry skin. The expression of SRC I-encoding gene was first detected 2 weeks post flowering