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Mitogenic Signaling Pathways of Growth Factors Can Be Distinguished by the Involvement of Pertussis Toxin-sensitive Guanosine Triphosphate-binding Protein And of Protein Kinase C.

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We have examined the possible involvements of pertussis-toxin (PT)-sensitive GTP-binding protein (Gp) and protein kinase C (PKC) in the mitogenic signaling pathways of various growth factors by the use of PT-pretreated and/or TPA-pretreated mouse fibroblasts. Effect of PT pretreatment (inactivation of Gp) and TPA pretreatment (depletion of PKC) on mitogen induced DNA synthesis varied significantly and systematically in response to growth factors.

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The Immunotoxicity of Triphenyltin Chloride in Mice

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The immunotoxicity of triphenyltin chloride (TPTC) in mice was investigated. The obtained results are summarized as follows: 1) When TPTC was injected intraperitoneally into mice at doses between 1 and 10mg/kg for 14 d, a reduction in the weights of thymus and spleen was noticed, however, the body weight was not changed significantly. 2) The production of hemolytic plaque forming cells in the spleen of mice immunized with sheep red blood cells was inhibited by the administration of 10mg/kg TPTC. 3) The production of effector T cells were also inhibited by TPTC. These results indicated that TPTC inhibits both the T cell dependent humoral and cellular immune responses in mice.

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MHD numerical analysis of tilting instability and velocity relaxation of spinning spheromak plasmas in a conducting vessel.

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The stabilization of the tilt motion of spheromak plasmas in a conducting vessel by a rotational motion and the relaxation of its rotational velocity are investigated by means of a three-dimensional magnetohydrodynamic simulation. Two types of rotational velocity are considered; the velocity with a toroidal component only, and the velocity with toroidal and poloidal components. In both cases, the initiation of the tilting instability can be delayed by plasma rotation, but for complete stabilization, a large rotational velocity such as Mach one is required. However, when the rotational velocity is larger than Mach one, a different kind of instability is found to take place.