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Catecholamines Increase Nerve Growth Factor mRNA Content in Both Mouse Astroglial Cells and Fibroblast Cells.

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Previous studies have shown that catecholamines increase the nerve growth factor (NGF) content in medium conditioned by mouse L-M fibroblast cells and mouse astroglial cells. In this study, the NGF mRNA levels in these cells were measured by Northern blot analysis. In astroglial cells treated with epinephrine (EN), the cellular NGF mRNA level increased prior to accumulation of NGF in the culture medium. 3-Hydroxytyramine (DA) and norepinephrine (NE) also increased the cellular NGF mRNA content. These results indicate that catecholamines enhance NGF synthesis of L-M fibroblast cells and astroglial cells by increasing the cellular content of NGF mRNA.

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Monoclonal Antibodies Specific for High Molecular Weight Form of Human Epidermal Growth Factor.

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Hybridomas that secrete monoclonal antibodies specific for the high molecular weight (HMW) form of human epidermal growth factor (hEGF) were established by fusing spleen cells obtained from mice immunized with purified urinary HMW-hEGF with myeloma P3x63Ag8.653. The resulting monoclonal antibodies were characterized basically into two groups. One group recognized both EGF and HMW-hEGF, while the other recognized HMW-hEGF specifically on radio immunoprecipitation. Surprisingly, the majority of the isolates was positive by Western blotting. These antibodies may be an extraordinarily powerful tool for histological study related to both forms of EGF.

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Effect of Sialoadenectomy on the Level of Circulating Mouse Epidermal Growth Factor (mECF) and on the Reproductive Function in Male Mice.

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Levels of mouse epidermal growth factor (mEGF) in mouse plasma were measured by sensitive two-site enzyme immunoassay (EIA) to study whether sialoadenectomy (removal of submaxillary gland) affects the level of the factor in the circulation. mEGF levels in plasma of sialoadenectomized mice were lower than those of sham-operated (operated without removal of submaxillary gland) mice, but the difference was not remarkable. That is, the submaxillary gland is not the sole source of EGF in the mouse body. Also in this study, we demonstrated that the EGF in submaxillary gland seems not to play important roles in male reproductive function of the mice.