〔Biochem. Inter., **11**, 825 (1985)〕

A Highly Sensitive Enzyme Immunoassay (EIA) System for Mouse Epidermal Growth Factor (mEGF).

MASAYUKI KUROBE, NORIAKI TOKIDA, SHOEI FURUKAWA, KOJI ITO, KYOZO HAYASHI*

A highly sensitive two-site enzyme immunoassay system for mouse epidermal growth factor (mEGF) was developed. The procedure is simpie and rapid compared to a bioassay. Also, the Fab' antibody-peroxidase complex is more stable than the ^{125}I-labeled antibody. Purified mEGF is detectable at a concentration as low as 3 pg/ml. The detection range was 0.3 to 680 pg/sample with 0.1 ml samples. Levels of immunoreactive mEGF in extracts from adult male mice well agreed with those determined by a radioimmunoassay and a radioreceptor assay. The submaxillary gland contained an extremely high concentration of EGF, while other tissues had low levels of EGF.

〔Biochem. Biophys. Res. Commun., **131**, 1080 (1985)〕

Synthesis and Secretion of an Epidermal Growth Factor (EGF) by Human Fibroblast Cells in Culture.

MASAYUKI KUROBE, SHOEI FURUKAWA, KYOZO HAYASHI*

Human fibroblast (WS-1) cells in culture synthesized and secreted an epidermal growth factor which cross-reacted with human epidermal growth factor (hEGF) purified from human urine. hEGF secreted by the cells (designated as WS-1 EGF or fibroblast EGF) and hEGF isolated from urine (designated as urine EGF) were immunologically indistinguishable. The molecular weight of fibroblast EGF estimated by gel filtration was identical with that of hEGF from urine. On chromatofocusing chromatography, fibroblast EGF was eluted mainly at pH 4.26 as a sharp symmetric peak with a minor peak at pH 4.62, like urine EGF. These results suggested that EGF synthesized and secreted by human fibroblast cells is an identical molecule to that of hEGF in human urine.

〔FEBS Letters, **192**, 313 (1985)〕

Action of Cobra Venom Cardiotoxin on Chick Embryonal Fibroblasts Transformed with a Temperature-Sensitive Mutant of Rous Sarcoma Virus.

NORIO KANEDA, MICHINARI HAMAGUCHI, KIYOHIDE KOJIMA, HIDETO KANESHIMA, KYOZO HAYASHI*

The cytolytic action of cardiotoxin analogue III from the venom of the Formosan cobra on chick embryonal fibroblasts transformed with a temperature-sensitive mutant of Rous sarcoma virus was investigated. The 50% effective dose of the toxin for the cells cultured at a non-permissive temperature (41°C) or for non-infected normal cells was about 8 μg/ml whereas the value was 2 μg/ml for the cells cultured at a permissive temperature (36°C). This indicates that the transformed cells became more susceptible to the cytolytic action of the toxin than the non-transformed cells.