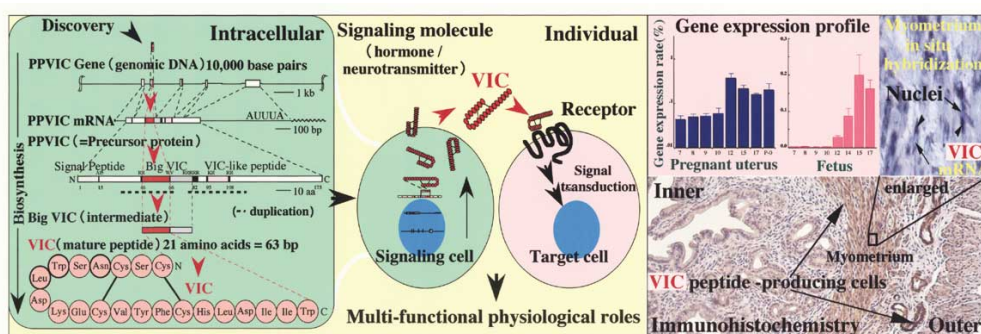


Elucidation of VIC/ET-2 Biosignaling System

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We discovered a novel signaling peptide (VIC/ET-2) from mammalian genome. The VIC induces hypertension, intestinal contraction, vasoconstriction, secretion, cell growth, differentiation, and apoptosis. At higher doses, VIC, which is structurally similar to snake venom SRTX, induces sudden death. Gene expression profiles have revealed an organ-specific expression in the brain, uterus, ovary, fetus, and intestine. The VIC holds great promise in

displaying intriguing physiological functions during neuronal differentiation, embryonic development, and reproduction in addition to its effects on the gastrointestinal system. Currently we are focusing on revealing the organ-specific functions of VIC using VIC-specific quantitative gene expression analysis and in-situ hybridization/histochemistry technique that we established.



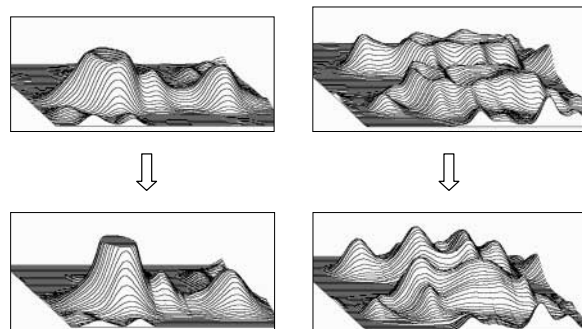
Biosynthetic pathway, biosignaling system, and elevated gene expression in uterus and fetus

Automated Processing System for Protein 2D-PAGE Images

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We have established the automated processing algorithm that deals with the images of protein 2-dimensional poly-acrylamide gel electrophoresis (2D-PAGE) which is thought to be a key technology in "proteome" analysis. Our processing algorithm automatically extracts the locations and intensities of the protein spots separated and visualized in 2D-PAGE, then automatically compares it with the huge number of such images. We have also developed a WWW (World Wide Web) based 2D-PAGE image processing system "PiKA2", that realizes automated 2D-PAGE image submission,

automated spot detection and automated spot pattern comparison via a computer network with a WWW browser.



Spot shape fitting by Gaussian-type function