JAPAN ROUNDUP

Scientists at the Tokyo Metropolitan General Research Institute for Clinical Medicine have discovered that medroxyprogesterone acetate (MPA) can inhibit angiogenesis (the formation of new blood vessels). One hundred micrograms injected into chicken embryos (where it is easy to observe angiogenesis) reduced new blood vessel formation by about 70 percent.

MPA is a synthetic derivative of progesterone with demonstrated anti-tumor activity. In fact, Kyowa Hakko (Tokyo) is now producing MPA to be used as an anti-cancer drug. Although its anti-angiogenic mechanism is not understood, Institute researchers have some evidence that MPA interferes with plasminogen activator activity. MPA may be useful in treating diabetics who suffer from blindness (caused by an abnormal proliferation of blood vessels) and for certain inflammatory disorders.

Scientists at Calpis Food Industries (Tokyo), working in collaboration

with Kazuo Shinmoku and Roru Nomura at the Tokyo Women's Medical College, have isolated a renal growth factor (RGF) from porcine and ovine pituitary glands. The scientists plan to clone the complementary DNA (cDNA) for the RGF gene and incorporate it into cell lines capable of synthesizing RGF at high levels. This should also facilitate structure-function analyses.

RGF stimulates the proliferation of cells lining the proximal tubules of nephrons—the site in the kidney where water and minerals are reabsorbed. In addition, the proximal tubules synthesize erythropoietin. Calpis has submitted a patent application for RGF, and is developing the factor for medical use. Animal experiments have demonstrated that RGF specifically affects the kidney, and no other tissues. This opens the door to its use as a selective agent for treating some types of kidney disease.

Scientists at Toa Nenryo, Inc. (Tokyo), working in collaboration with researchers at Yamaguchi University

Medical School and the Virus Research Institute at Kyoto University, have developed a potential vaccine for the human immunodeficiency virus (HIV). The vaccine is a vaccinia virus containing the gene for the HIV *gag* protein, which is important to HIV's infectivity. Rabbits injected with the recombinant virus produced three different anti-*gag* antibodies. Toa Nenryo scientists have also produced recombinant vaccinia viruses containing the HIV *env* gene sequences.

Currently, most anti-HIV candidate vaccines target viral surface proteins, since they are relatively abundant and accessible to antibodies. Recently, however, it has become clear that HIV exhibits considerable antigenic variation, limiting the usefulness of vaccines that elicit an immune response to only one HIV subtype. The *gag* protein sequence, on the other hand, is relatively conserved.

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