Two groups of Thai scientists — one group from Princess Chulaphoh Research Institute in Bangkok and another group from Mukdahan Province in north-eastern Thailand — claim to have discovered ways of treating HIV-infected AIDS patients from traditional herbs.

Dr. Deja Sukanmana, Minister for University Affairs, who heads the research team in Bangkok, said that they have discovered a drug which has passed all the necessary evaluations, and that they will be filing for a patent soon. Dr. Deja further said that the drug is produced from traditional herbs and therefore there are no side-effects from consuming it. He added that their invention is cheaper and more effective than existing drugs produced by western countries.

The research conducted in Mukdahan Province is sponsored by the Ministry of Health. According to one of the scientists from the group, they have come up with a herbal formula to treat HIV-infected AIDS patients. He said that the herb, known as ‘red soap’, was effective in treating AIDS patients by increasing the count of white blood cells. Two AIDS patients who were treated with the herb survived much longer than expected. The herb can be used for treating AIDS patients in all stages, but the patient must stop smoking and must not consume alcohol during treatment. Scientists who conducted the research mentioned that the herb cannot eliminate the AIDS virus, but it can regulate the immune system and prevent the virus from propagating, thus prolonging the lives of patients.
New, Highly Sensitive Method for Diagnosis of Cancer

The Tokyo Metropolitan Institute of Gerontology and the Tokyo Metropolitan Institute of Medical Science have jointly developed a new technique for the diagnosis of cancer.

The new method involves the analysis of sugar chains attached to the surface of cells using mass spectrometry, an analytical technique that identifies the chemical structure of substances from the way they behave after being ionized in a vacuum.

As cancer cells and virus-infected cells display characteristic sets of sugar chains on their surfaces, the detection of these sugar chains provides a way of diagnosing disease. With the help of fluorescent markers, the new technique can be used to identify the individual sugar molecules that make up the sugar chains attached to the cell surface.

According to the research group, the new technique is 1000 times more sensitive and 100 times faster than the conventional sugar-chain analysis techniques. It is therefore a much more sensitive diagnostic test for cancer.

The research group used the new technique to analyze trace samples of lectin, a class of glycoproteins with a characteristic set of units of proteins and carbohydrates, such as in sugars, and it could identify the sugar elements from only 10 trillionths of a mole of lectin. In comparison, the conventional method using gel filtration requires at least a 10 picomole sample. Furthermore, the new method takes only minutes compared to the conventional method, which takes hours for gel filtration.

Chinese Institute Develops Low Cost Treatment for Anemia

The Institute for Military Medical Science Research of the Nanjing Military Command has succeeded in developing a recombinant human erythropoietin (rhEPO) injection for the treatment of anemia resulting from kidney failure.

The new medicine can be purchased at half the price of imported products, which means that more patients will have access to the treatment. The Ministry of Health has approved the trial production of the medicine and from clinical testing results, the product meets international standards.

Erythropoietin, produced by the kidney, is a hormone responsible for the differentiation, proliferation and maturing of red blood cells. When erythropoietin levels are reduced, as in the case of kidney failure, patients suffer from anemia.

Currently, China has about 1 million people suffering from kidney failure, and most of them have developed anemia. The incidence of chronic nephritis is 2.5 in 1000 people, with the majority of the patients developing kidney failure subsequently.

Conventional treatments include blood dialysis and blood transfusion, but these are expensive and time consuming, so not many patients can afford to pay.

It took the Military Medical Science researchers about six years to develop the new product, at a cost of some 60 million yuan (US$7.2 million).

The product has cleared two phases of clinical experiments in some major hospitals in Beijing, including the Beijing Union Medical College Hospital and the Sino-Japanese Friendship Hospital. It has a success rate of 88.5%.

The research project has been rated by the Ministry of Health as one of the ten major medical science successes of 1994, and has won support from the State Science and Technology Commission as a state-level key research project in the same year.
Cloned Lambs Produce ‘Medicinal Milk’

One year after researchers in Scotland successfully produced ‘Dolly,’ the world’s first cloned sheep, it was remarked that within a decade, we might be seeing genetically-engineered cloned sheep. In fact, within just a year, the same researchers have produced the sequel to Dolly, two genetically modified, cloned lambs named Polly and Molly. The only difference is, Polly and Molly have human genes and an added companion marker gene in each cell of their bodies.

At this stage, the two lambs are a little too young for a thorough and reliable examination to be performed, but the researchers are optimistic that in just a few months’ time, they will have complete confirmation of the results of their research. If everything has gone according to plan, the two lambs will produce milk that contains Factor IX (FIX), a kind of blood clotting factor that is usually used in the treatment of hemophilia.

Although it sounds like pure science fiction, this kind of ‘medicinal milk’ represents the ultimate end product the cloning researchers have been targeting. Human proteins, which can be used to treat a variety of diseases, can be purified from human blood, but this is expensive and runs all the usual risks of contamination by AIDS or hepatitis C virus. They can be produced in cell culture, but again it is an expensive process that yields only small quantities of the proteins.

Genetic engineering, combined with cloning, has the potential to allow mass-production of these proteins. A cloned sheep with the necessary human gene may produce relatively vast quantities, which will be available in the animal’s milk. For some of these proteins, it has been estimated that just ten genetically modified cows could supply enough to satisfy global demand, which puts the potential of the new developments into perspective. If the test results are successful in a few months’ time, bulk production of homologous livestock containing human genes could be underway within the next few years. This could have huge implications for medical science, with a cheap treatment for hemophilia being just the tip of the iceberg.

As far as cloning is concerned, Polly and Molly represent another form of breakthrough. Out of a batch of 63 fertilized eggs introduced into surrogate mothers, three lambs survived. In contrast, Dolly was the sole survivor of a batch of 227.