

Zoo Animals, Racehorses and People

Patents on life: A documentation of applications submitted to the European Patent Office 1999-2000

- Short Version -

In the course of the past few months, patents on life hit the headlines as Greenpeace uncovered some scandalous patents on humans, human-animal hybrid creatures, plants and animals. These patents were issued by the European Patent Office (EPO) in Munich.

A key decision has now to be taken in connection with “patents on life”: in many European Union (EU) countries a controversial EU patent directive is to be transposed into national law. This would explicitly legalize the controversial practice of the Patent Office.

According to Greenpeace, the only acceptable way ahead should be the renegotiation of the patent Directive at a European level and not its legalization.

If national parliaments transpose the European directive as it is into national laws, it is to be feared that the EU’s executive European Commission will delay for the foreseeable future the renegotiation of the directive.

The loophole

Only inventions (in the original sense of the term) can be patented.

However, the EU directive would allow patenting of discoveries, such as isolated human genes.

So human body parts - including complete organs - , mammals and large parts of living nature are to be declared the intellectual property of patent holders.

Claiming extremely wide-ranging intellectual property rights on parts of living nature is becoming part of the strategy to privatize previously common goods.

Industry and the European Patent Office drew up the EU directive. In addition, the genetic engineering industry exerted a massive influence on the debate in the European Parliament. They even went so far on several occasions between 1996-1998 as to push wheelchair patients into the parliament building in order to put MEPs under emotional pressure with the threat “No patents, no cure”.

Surprising results

In order to show the extent to which the industry is claiming patents on life, Greenpeace, with the support of the organization “Kein Patent auf Leben!” (“No patents on life!”), carried out two years of research at the European Patent Office. More than 1000 applications for patents from the years 1999 and 2000 were studied in detail and sorted by category. From this unprecedented and unique collection it becomes clear just how serious the shortcomings of the EU patent directive are.

Our research produced several surprising results:

➤ There was a remarkable increase in the number of patent applications aimed specifically at human beings. Some of these patent applications prove more clearly than any other publication the extent to

which the industry plans to use human beings as a new commercially exploitable source of raw material.

- The number of patent applications for genes is increasing dramatically and in some cases several hundred human gene sequences are claimed at once.
- There is a systematic extension of patents claimed in the area of food production. Today patent applications concern not only the wheat grain for sowing but also the flour made from it for baking bread.
- New developments comprise patent applications for non-GM foodstuffs.

Examples of patents:

1. Man and animal

WO 00/27995: Breeding human embryos

Applicant: Monash University (Australia)

- Claims:

These relate to human stem cells and processes for manufacturing them

- Special features:

According to the printed patent specification, human embryos were bred in a laboratory over a period of six days and then destroyed to obtain cells. The stem cells were then further bred in the laboratory. In order to show that the cells retain their embryonic ability to divide, they were injected into the testicles of mice, where tumors (teratomes) developed, in which human tissue was shown to exist, as is typical for many different kinds of organ.

- Legal assessment:

As “only” processes for manufacturing stem cells and the corresponding stem cells are claimed, in principle the patent can be granted in accordance with EU law.

WO 00/01806: Zoo animals, racehorses and people

Applicant: University of Hawaii (USA)

- Claims:

New reproduction process making it possible to clone female egg cells before they are fertilized. The animals created are themselves also covered by the claims. Human beings are explicitly included. The patent claim covers the process on the egg cells, the breeding of embryos and the embryos themselves, including human beings.

- Special features:

According to the printed patent specification, this procedure is to be used on rare zoo animals, valuable racehorses and human beings.

- Legal assessment:

This is not a cloning procedure, but a process in which cloning steps are combined with artificial fertilization. It is therefore not a procedure for cloning human beings as no persons with identical genetic information are created. This means that the process could be patented.

WO 99/33956: Artificial fertilization combined with gender determination

Applicant: XY, Inc. (USA) and Colorado State University (USA)

- Claims:

Process for artificial fertilization combined with gender determination. The claims are extended to all animals created. Human beings are not excluded.

- Legal assessment:

According to the EU directive, procedures for the artificial fertilization of human beings and animals can be patented.

2. Seeds and food

WO 00/48454: Non-GM food

Applicant: Northland Seed & Grain Corp. (USA)

Content and claims: Procedure for testing non-GM seed and the food produced from it. The procedure covers the selection of suitable seeds, planting and harvesting the plants and taking samples to test whether the goods are GM-free. The claim also covers all food and seeds tested in accordance with this procedure.

WO 00/53768: Golden rice

Applicant: Greenovation Pflanzenbiotechnologie GmbH (Deutschland)

Content and claims: This patent covers „Golden rice“, i.e. rice grains with an increased Pro-vitamin A content, as well as other “edible seeds”, such as nuts. The well-known genetic researcher Ingo Potrykus is named as the inventor. The claim covers genes, seeds and plants, including vegetables, ornamental plants (such as orchids and violets), coconuts, coffee, tomatoes, soybeans and melons. The rights to this patent have been sold to a company called Syngenta, which claims it would give small quantities of Pro-vitamin A rice to some of the poorest farmers in developing countries free of charge. Otherwise they wish to “turn this patent into gold” on their terms on the European market and elsewhere.

WO 00/29591: Flour for baking bread

Applicant: Novo Nordisk (Denmark)

Content and claims: Genes for an enzyme with which starch can be split in order to improve the baking quality of wheat. The application covers the plants and seeds to be manipulated with this gene, e.g. wheat. In addition, even the wheat flour and the use of the flour to bake bread is claimed.

WO 00/04175: Ketchup and sauces

Applicant: Unilever (Holland)

Content and claims: Unilever claims plants, seeds and crops with possible health-promoting ingredients (flavonoids) and the corresponding genes. Furthermore, the processing of the crops into food and the processed products, such as sauces, ketchup or soup, are covered by the patent application.

3. Parts of the human genome

WO 99/51727, Applicant: Metagen (Germany)

Content and claims: Over 100 gene sequences from human ovary tissue are claimed. Their precise function is not known; it has only been discovered that these genes are more active in ovary tissue than in other organs. In practical terms, they are to be used for diagnosis and therapy in cancer treatment. The “inventor” is the well-known genetic researcher André Rosenthal.

WO 99/22430, Applicant: Chiron Corp (USA)

Content and claims: In the roughly 900 pages of the patent more than 1000 gene sequences in a pathogen causing meningitis (*Neisseria meningitidis*) are claimed. The commercial applications would be, among others, developing serums and treating patients. The well-known genetic researcher Craig Venter is named as the “inventor”.

There is a clear need for action on the part of national EU Parliaments:

- The first draft of this directive originates in 1987. In the meantime the human genome has largely

been decoded. In many cases the procedure for identifying genes has nothing to do with an “invention”. In addition, it has become clear that individual genes often fulfill several functions: Of the 100,000 genes previously assumed to be required to perform the various bodily functions, only about 30,000 genes are left, and their task must now be regarded as considerably more complex than previously thought. This means that patents should be strictly limited to individual functions and the genes themselves excluded from protection by patent.

➤ In September 1999 the European Patent Office began to patent types of plants and animal varieties on the basis of the EU Bio-patent Directive passed in 1998. In doing so, the Patent Office ignores the fact that in reality it is only the European Patent Convention (EPC) that constitutes its legally binding foundation, not the EU Bio-patent directive. On the other hand, the EPA expressly prohibits patents on types of plants and animal varieties. In the EU Bio-patent Directive the ban applying previously was so severely restricted by legal tricks that finally it became ineffective. This means that genetic engineering multinationals have control over breeding, agriculture and food production to a hitherto unsuspected degree.

➤ The prohibition on the patenting of “human creatures” anchored by Members of the European Parliament in the EU Directive is legally so vague that in most cases it cannot have any effect. This is shown by ongoing cases at the Patent Office and by new legal analyses undertaken by various experts. This creates an incentive to conduct experiments on human embryos for primarily commercial reasons. A race has started between companies in order to be the first to apply for a new patent. This may result in additional experiments, completely unnecessary from a scientific point of view, being conducted merely for competition reasons.

EU Patent directive criticised from all sides

In March 2001 **the European Parliament** itself demanded a ban on the patenting of plants and animals. In its recommendation 1425 of 23.9.1999 the **Council of Europe** notes “... that neither genes, cells, tissues or organs which originate from plants, animals or human beings may be regarded as an invention, nor can they be covered by monopolies guaranteed by patents.”

The **Netherlands** and **Italy** took legal action against the EU directive before the European Court of Justice (ECJ). In other European countries too the debate is heating up considerably: On February 8, 2001 the French President Jacques Chirac announced his intention to call upon the European Commission to review this directive with the aim of preventing the patenting of human genes.

The **European General Medical Council**, the **Catholic and Evangelical Church in Germany**, the German **Farmers’ Association**, and the **Ethics Committees in Denmark and France** too have demanded a complete renegotiation of this EU directive.

In December 2000, the German **Bundesrat** (Upper House) and the **Bundestags-Enquetekommission** “Recht und Ethik der modernen Medizin” (Law and Ethics in Modern Medicine” Inquiry Commission of the German Federal Parliament) expressed an extremely critical view of the European directive and its planned implementation. According to an Emnid survey conducted in October 2000 in Germany, 84 per cent of respondents were against patents on life.

Greenpeace demands:

- ⇒ that the implementation of the EU “patent” directive (98/44 EC) be stopped and
- ⇒ its renegotiation be started without delay at European level