

- Proliferation of patents
- Implications of patents for benefit sharing

- Over 400 worldwide patents related to **krill** (pink gold)



- Can a living organism be patented?
- Why so many patents around the same object?

Patents on living organisms

- *Diamond v Chackrabarty* 447 U.S. 303 (1980)

Human- made microorganisms can be patented as a «manufacture» or «composition of matter» under the 35 U.S.C. § 101

Harvard Oncomouse April 1988, US Patent no.
4,736,866

A genetically modified mouse (by
introducing an oncogene) highly
susceptible to cancer



Why so many patents? Patent thickets

- Ritonavir: 800 patents
- Motorola/Google: 17.000 patents

Proliferation of biotech patents (1)

- Invention or discovery?

European Directive on Biotechnological Inventions (98/44/EC)

- Article 3
 1. Biological material which is isolated from its natural environment or produced by means of a technical process may be the subject of an invention even if it previously occurred in nature.
 2. Biological material which is isolated from its natural environment or produced by means of a technical process may be the subject of an invention even if it previously occurred in nature.

Gene patents: “a lawyer’s trick” ?

- “The chemical structure of native human genes is a product of nature, and it is no less a product of nature when that structure is ‘isolated’ from its natural environment than are cotton fibers that have been separated from cotton seeds or coal that has been extracted from the earth,”
- US Department of Justice-Amicus curiae in *Myriads*

Concept of ‘invention’

- Natural substances, even if isolated or purified- not patentable

Proliferation of biotech patents (2)

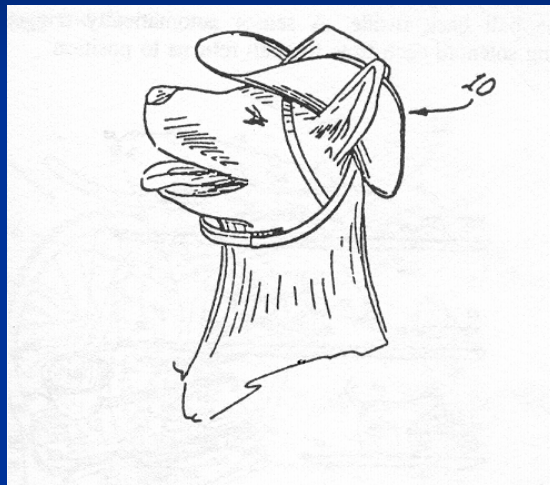
- Low standards of patentability-
inventive step

Animal Hat Apparatus and Method

Patent Number: 4,969,317

Date of Patent: Nov. 13, 1990

Inventor: April Ode, Lake Havasu City, AZ



British Patent of Sam Houghton



TRIPS Agreement

- Flexibility to define 'invention'
- Exclusions (facultative) of plants and animals
- Rigorous application of patentability standards

Patents and benefit sharing

- Are patents essential for innovation?
 - Scientific research
 - Open innovation

Joseph Stiglitz on patents

...are the incentives provided by the patent system appropriate...? Sadly, the answer is a resounding "no."

'Prizes, not patents' (3.3.07), <http://www.project-syndicate.org/commentary/prizes--not-patents>

Patents can block innovation...

- Broad claims (isolated gene + function)
- Patent thickets

Patents, access and benefit sharing

- CBD, article 16. 5: The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

Reconciling patents with access & benefit sharing

- Protecting inventions, not discoveries
- Exclusion of plants and animals
- Applying rigorous standards of patentability
- Limiting the scope of gene patents (if allowed)
- Allowing research on patented materials
- Promoting open innovation initiatives