

MMG 301 Lec. 30 Final Comments

For Today:

1. Briefly discuss Intellectual Property Rights related to microorganisms.
2. Comment on Strain Deposition.
3. Answer Questions/Review lectures 19-29.

Patents

Can microorganisms be patented? The first effort to patent a bug was in 1972 for a strain useful in hydrocarbon degradation. After 8 years, the Supreme Court said yes.

Must have a non-obvious “invention” that could be:

- a new isolate with unique properties
- a recombinant microbe
- an enzyme or recombinant enzyme purified from a cell, or an enzyme put to a unique use.
- a new antibiotic or other drug

Example: Prof. Barnett Rosenberg (at MSU) showed that cis-Pt inhibited cell division of *E. coli*. After showing this compound had anti-cancer properties, MSU patented its use and has received \$\$\$\$ in royalties.

Patents protect the Intellectual Property Rights of the inventor so that you can reap the benefits of your research.

The patent laws of the United States and most other countries require an inventor who wishes to obtain a patent to provide the patent office with:

- A *full disclosure* of the invention, including the manner and process for making and using it which would enable a person skilled in the art to practice the invention. (this is not the same as a trade secret—full details of patents are published on the web).
- A disclosure of the best mode for practicing the invention (reduction to practice). If the procedures are shown to be faulty, a patent may be denied.

Patents are granted for 20 years. If the patent is for a new drug, the costs of development (estimated at \$800 million to bring to market) must be recovered during this time. It may take 8-10 years before phase I, II, and III trials are completed, so this decreases the time period in which money can be made.

If a patent is granted, one may license the patent to obtain royalty income (or start a company). The income from royalties often does not cover the costs of obtaining a patent (e.g., lawyer fees, patent fees, deposition fees, etc.).

A good patent lawyer is almost a necessity to ensure appropriate wording of the patent. A competitor might use slight modifications of a procedure to work around your patent or to apply the invention to a “new” purpose.

Strain Deposition

In cases where a novel microorganism is involved, the patent office traditionally requires the deposit of a sample with a recognized patent depository in order to meet the above disclosure requirements.

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or
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