

# Innovation, Invention in Biotechnology and Intellectual Property Rights Law :

Can India Catch the Bus?

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# What is a Patent?

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- To Protect inventions
  - Literature, software – copyright
  - Brandnames – trademarks
  - Industrial design – designs law
- Fence around Information
- So that it can be bought and sold and used to attract investment

# WHAT IS A PATENT (contd.)



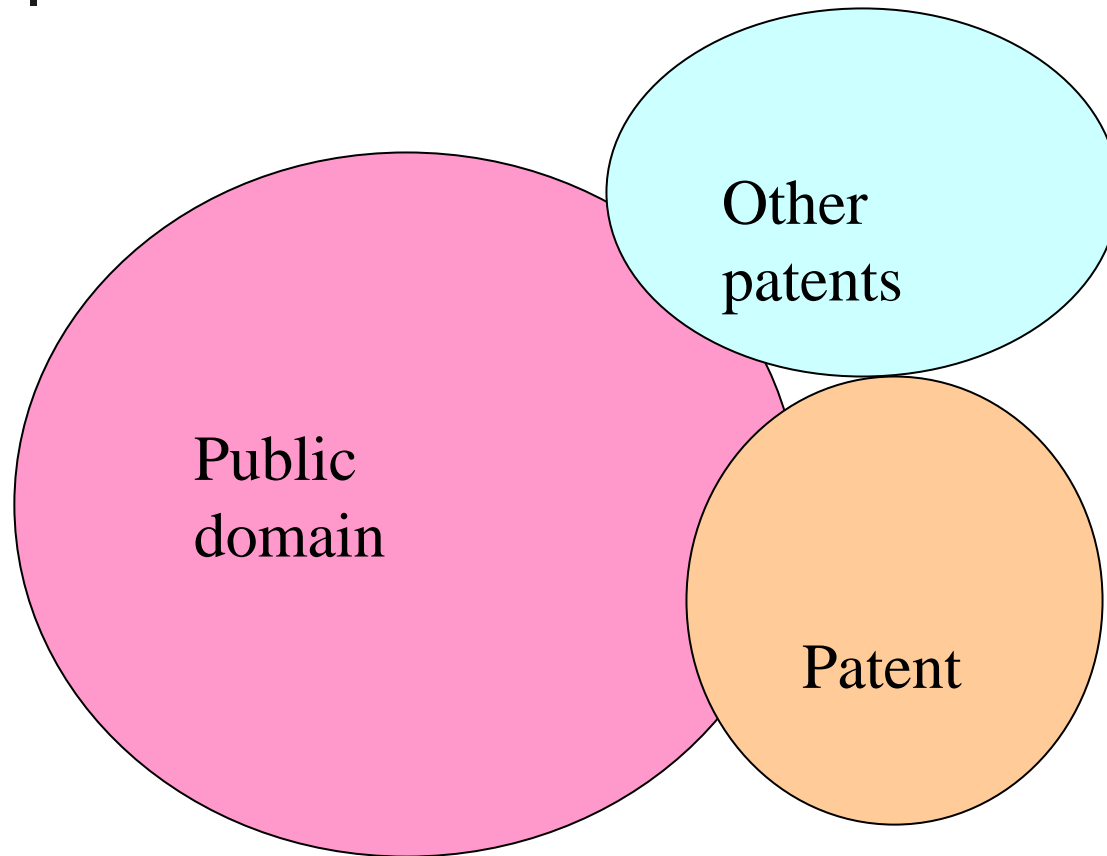
Patents permit their holders to forbid the use, sale or manufacture of a product or process for a limited time.

- Inventors have to disclose all technical information about their invention in exchange for the patent
- Valid in the country in which it is granted.
- For an invention that is novel, useful and not obvious



# Patent is a Reward to Inventor

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# Historical Perspective in India

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- 1856 – Protection of Inventions based on the British Patents Act 1852
- 1888 - Protection of Inventions Act
- 1911 – Consolidated as Inventions and Designs Act
- 1972 – Indian Patents and Designs Act 1972
- (After Ayyangar Commission Report suggested we should keep foreign patent applicants to minimum)
- 2005 Patents Act



# Patents are Linked to Level of Development in a Country

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“....I knew that a country without a patent office and good patent laws was just a crab and couldn't travel anyway but sideways and backwards...”

Mark Twain in one of his books



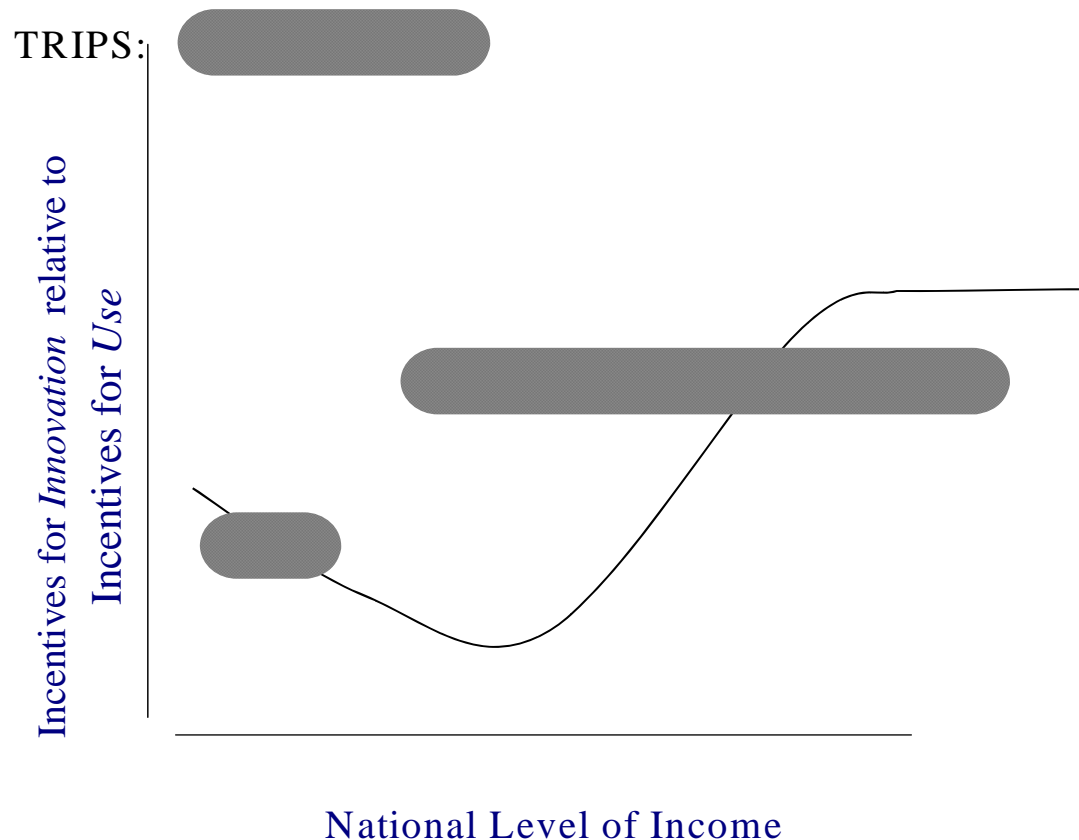
# TRIPS AGREEMENT

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- Controversy and Hope
- Link TRADE to Intellectual Property so that third world countries are forced to implement

# Development Level, Patent Laws and TRIPS

Ken Shadlen, *The politics of Intellectual Property: Insights from Latin America* (London School of Economics)





# Biotech – Some Remarkable Inventions Protected by Patents

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- Cell lines, genes, sequencing technology, genetically modified animals, plants.
- Polymerase Chain Reaction – A Xerox machine for DNA.
- Transgenic Animals – the oncomouse – a mouse that can express human cancer gene. Ferociously litigated in US, Canada, Europe.

# THERAPEUTICS

## Hepatitis B Vaccine



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- Hepatitis B infection - more than 1 million deaths a year, also leading cause of liver cancer.
- In the US, the hepatitis death rate fallen to 5,000 deaths a year
- Largely due to effective vaccine used as childhood inoculation in past decade and a half



# Medical Biotechnology In India Prospects

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- Developing as base for biotechnology
- Skilled manpower – trained here and abroad
- Clinical trials at a much reduced cost compared with the West.
- India also has the largest number of FDA-approved manufacturing plants outside the US



# New Foreign Direct Investment

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- Bayer, Forest, GSK and Schwarz all have R&D alliances with Indian firms
- With product patents multinationals will be more willing to make direct investments
- Exports of Local R & D at \$ 2 billion a year will be boosted by product patent protection
- And could make Indian industry a truly global player.



# VENTURE CAPITAL

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- The Biotechnology Fund - invest in drug discovery & healthcare related areas; agriculture & animal husbandry, industrial & environmental biotech
- APIDC-VCL started in 1990 - brainchild of the current RBI Governor



# Jan 1<sup>st</sup> 2005

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- Indian pharmaceutical market face paradigm shift
- Updated Patent Laws based on TRIPS Agreement – Trade Related Intellectual Property Rights



# Patents Law 2005 – What is New

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- Term of Patent – 20 years
  
- A New Definition of Invention –  
Includes Products and Processes

# Third World

- Exploitation is exaggerated?
- Reward for innovators, underplayed!





# Third world-Assets

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- "centers of diversity," regions of the greatest crop genetic and specific diversity
- they stand to suffer the most from gene introgression, invasion of weeds and proliferation of new viral elements



# Looking to the Future – Health Sector

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- Invest in products that specifically draw upon homegrown advantages such as **Ayurveda**
- Indian plant and human sub-racial diversity hold vital clues to diseases mechanisms and cures.

# PARTY SMART?

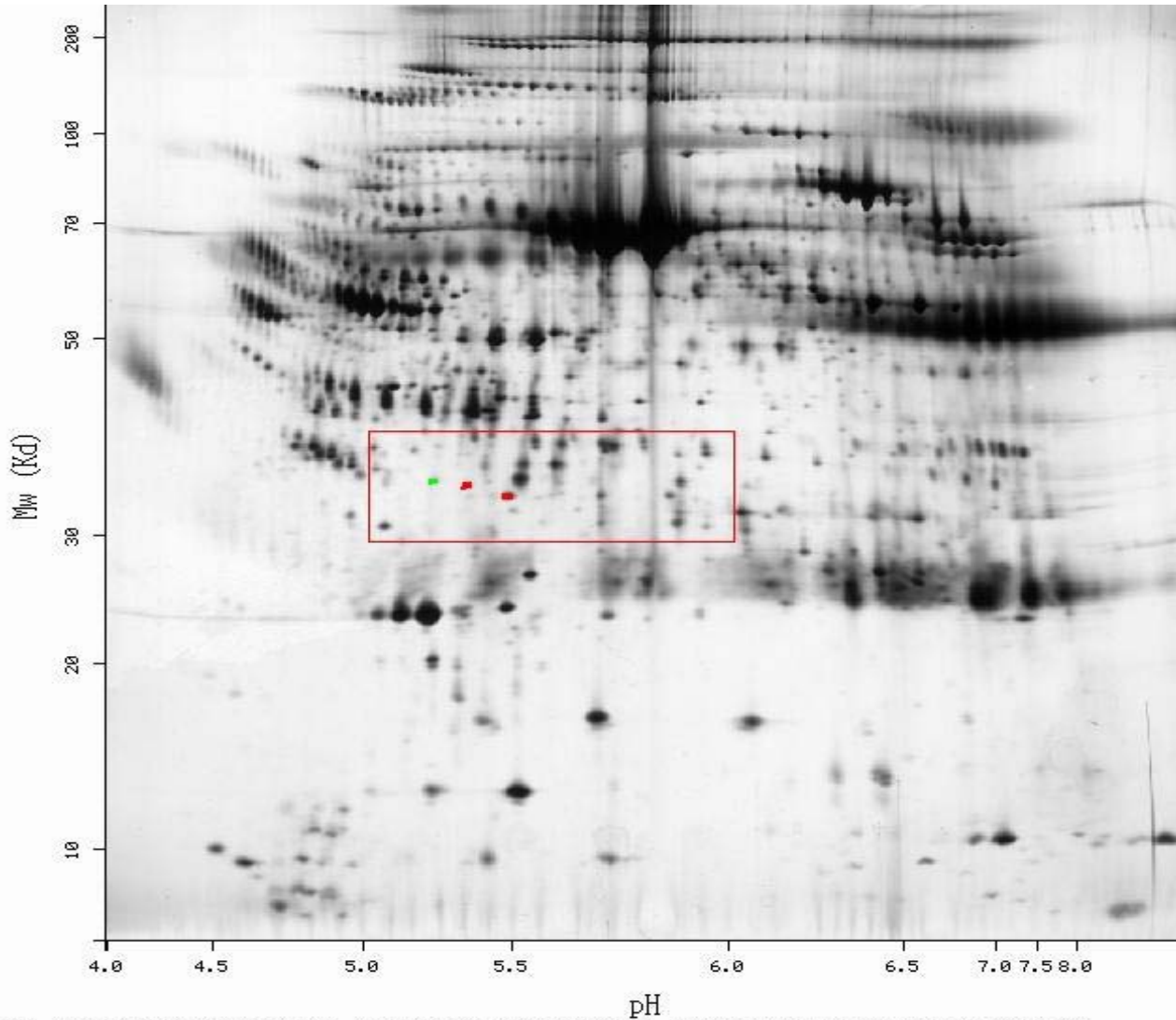
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"Have you got a hangover?"

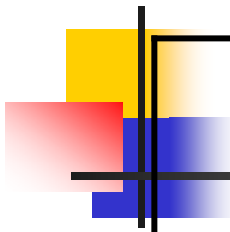
- Ten million working days are lost annually in UK costing an estimated £960 million,

# PROTEOMICS



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# Final Analysis



Against	For
Biopiracy	Biotechnology
High Prices	Investment
We cannot compete	We are competing
Emphasis on individual	If we take care of innovative individual, all will benefit



# Need for Diversified and Decentralized Decision-making

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- Growing trend worldwide for the accountability of governmental and intergovernmental institutions at all levels--local, national, regional and global.
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- Movement to ensure equitable and sustainable systems of living

# UNCLE SAM



**Now, Will He Let Go?**