

## Genes & Patents

### What is a gene?

A gene is a segment of DNA that provides a blueprint for a protein.

### What is a gene patent?

If an individual or a corporation is granted a gene patent they are allowed to restrict the usage of the gene whether for money or research as they see fit. The first gene patent was granted in 1981.<sup>1</sup>

### Ethical Implications of Gene Patents:

- Human Dignity
- Economy
- Personalized Medicine
- Public Health

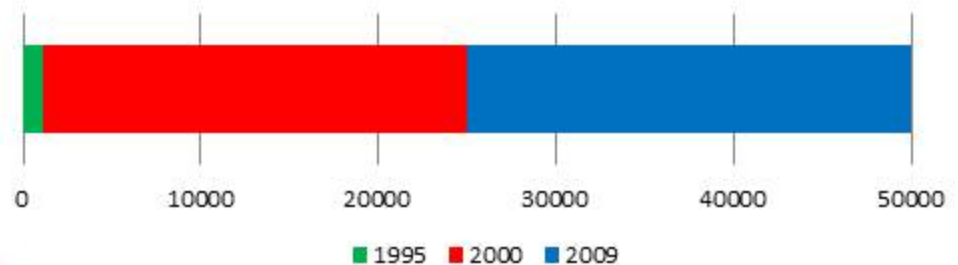
### Laws:

- Patents are given for genes that show “specific, substantial, and credible utility”
- Human genes can no longer be patented in their natural state (*Association for Molecular Pathology v. Myriad Genetics, Inc., 2013*<sup>2</sup>)

## Laws & Ethics

# Bioethical Issues in Gene Patenting

Number of Total Genetic Based Patents by Year<sup>3,4</sup>



## Pros

- Human genes cannot be patented in their natural state
- More Biotech jobs and more startups
- More research done to create novel and useful genes
- Patents prevent hiding of new research
- Encourage personalized medical innovations

## Cons

- Reduces genes to commodities
- Companies have a monopoly on certain treatments
- Research on patented genes is halted by outside groups who own the patent
- Investment into genes is usually done with the expectation of monetary return
- Discourages research on diseases with low patient base