

## PREFACE

Advances in life sciences especially in biotechnology research, have an astonishing impact on life expectancy and the quality of life. Biotechnology has emerged as one of the fastest growing fields of technology today. The role of intellectual property rights is highly significant in spurring innovation and scientific progress in any field of science. However, biotechnology research is proved to be rather sneaky for intellectual property laws to handle, especially for patents.

Unlike in any other field of science, the extension of the patent regime to biotechnology research seems to be rather impracticable, especially with genomic research. The issues are 1) whether genes or a gene fragments are patentable or not and 2) whether they are mere discoveries of products of nature or not. Despite decades of research, debate and judicial scrutiny, a convergence of opinion is yet to emerge in this regard. An alternative proposition available is the copyright protection of genomic research databases. Biotechnology research data relating to genes and gene fragments hold enormous value for a researcher. But biotechnology research data, being 'non creative' and 'non original,' fall outside the ambit of copyright protection.

An almost similar scenario existed in the software sector where an attempt to patent the software failed to a certain extent. But the copyright regime could adequately safeguard the software sector, though it was not the case with biotechnology research data. Interestingly, a section of free thinkers in the software sector opted for an alternative regime popularly known as 'open source movement'. Though it was alleged to be an anti-intellectual property movement, it relied on copyrights to manage its licensing terms. This movement was a big success in the area of software.

Motivated by this success in the software sector, biotechnology researchers also adopted similar approaches. As a result we could witness the world's largest open collaborative endeavour, Human Genome Project (HGP) which successfully attempted sequencing of human genes. The project had participants from various parts of the world and they released the data freely on the public domain. The HGP was followed by similar projects like HapMap to sequence human genome. These collaborative endeavours gave a new dimension to biotechnology research.

This thesis is a sincere attempt to address the major intellectual property issues relating to biotechnology research and thereby it explores how ‘open source’ approach becomes feasible in this area. It also analyses how far this can be used as an effective intellectual property management strategy.

“By relinquishing the profit drive, free thinking or free revealing can take intellectual creativity to a cosmic plane”. The idea for this thesis was conceived while I was working as a Research Associate at the Kerala Agricultural University. The choice of the topic had an accidental association with my project station at the Information Technology and Biotechnology Complex (IT-BT Complex) and it influenced my thoughts to a large extent. The exploration of the intellectual property issues in biotechnology ultimately led me to the identification of this research topic.

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