

Biotech trends and European policy in the 21st Century

In the late seventies/early eighties, it was biotechnology, which made it possible to produce recombinant insulin in large quantities to meet the high market demand from the millions of diabetics worldwide, and create in vitro fertilized (IVF) human embryos for non-fertile couples who otherwise would not have been able to acquire children. Since then, an explosive development in Life Sciences and in particular in Molecular Genetics-deciphering of the human genome-led to newly acquired molecular knowledge, which when fully converted to application using biotechnology will revolutionize our life.

Nowadays, biotechnology impacts on almost every human activity including, health care (drug-discovery process, possibility to benefit in the future from stem cell-mediated organ transplantation); food industry (genetically-engineered food); and security (biodefence/anti-bioterrorism). As a result, Genetics and Biotechnology attracts the attention of an increasing number of scientists as well as the mass media and the general public. On the other hand, international organizations, governmental agencies, large pharmaceutical corporations, and small/medium biotechnology companies (Biotech SMEs) take bold steps aimed to increase their participation in the world biomarket with parallel unprecedented investments in bio-related projects across the globe. It is estimated that bioeconomy will take off into its full growth during the end of the second decade of the 21st century. For over two decades researchers have been trying to study the molecular origin of a large number of human diseases. However, it is only within the last few years that genetic discoveries have significantly advanced our understanding of the molecular pathogenesis of major illnesses such as cancer, diabetes, AIDS, arthritis, osteoporosis, etc. The fact that virtually every human disorder has an inherited (genetic) component is now widely accepted among members of the scientific community. Unravelling the underlying molecular mechanisms responsible for the development of a disease is the first crucial step towards the production of novel drugs, with the following steps being: target identification; lead generation; drug development, and drug marketing. Pharmaceutical companies, Biotech SMEs, and cutting edge University research groups compete in the race for the most rapid production of high efficacy drugs with less adverse effects using the power of molecular genetics. Pharmacogenetics is expected to have an unprecedented impact on the practice of medicine in the years to come. Molecular Medicine born from the breakthrough discoveries in molecular genetics, and individual-based therapeutic treatment, will be the biotrends in the 21st century.

In the BioMedico Forum, Aarhus, Denmark, we are developing an innovative model system to catalyze biodevelopment and associated biobusiness with ultimate goal the regional and Danish advancement in the fierce world bioarena. Our market-oriented strategy, which we believe can answer the question why to invest in Biotechnology, is designed to help biotech SMEs or cutting edge University groups to better exploit their breakthrough discoveries. To accomplish this, we take advantage of our own expertise but also those of our associated experts to help our members overcome hurdles while developing biomedical, biotechnological, and medical technology applications. Our model involves multilevel support and guidance during the critical transformation of a university research group to a startup Biotech in areas such as, the science behind the discovery; how to establish constructive alliances/biopartners; and how to best incorporate the necessary business component which is required to make a company grow and gain competitive advantage. As regional branch office of the European Federation of Biotechnology (www.efbweb.org), and member of the Scandinavian networking organization "Scanbalt" (www.scanbalt.org), but also primarily through our ongoing collaboration with the New York Academic environment, we can access critical information, share professional experience on research & development matters, and thus, be in a position to influence biodevelopment beyond Denmark. Unlike other European countries, Denmark offers unprecedented State financial support through investment funds to start-up companies, which in conjunction with previous positive experience drawn from the established Scandinavian Pharma Firms can increase the chances for a successful outcome when launching a new start-up company. Moreover, our model system takes into account the fact that in comparison with other regions in Europe, the local people have a rather conceptual understanding of Biotechnology and Genetics, in the sense that future development and growth will be largely dependent on breakthrough discoveries originating from these fields.

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