Application of Biotechnology towards Diagnosis and Treatment in Veterinary Medicine in Africa: Potentials and Future Developments

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Abstract

Biotechnology is an already established technique in several areas of medicine, but its application in the field of veterinary medicine has only started to emerge with the potential to revolutionize veterinary practice. This paper therefore reviews the potential applications of biotechnology in veterinary medicine towards diagnosis and treatment in Africa which includes; molecular gene cloning, production of recombinant biotechnology derived vaccines, application of polymerase chain reaction (PCR), Real time polymerase chain reaction (RT-PCR), Polymerase chain reaction - restriction fragment length polymorphism (PCR-RFLP) and Bioinformatics to diagnosis of infectious and parasitic diseases , gene therapy, disease diagnosis, treatment delivery systems and many more. These components occur in other parts of the world and are therefore presumed to be consolidated into the African delivery framework as a private enterprise in a foreseeable future. Whilst it is sensible to postulate that biotechnology application and its peculiar evolution will imminently transform veterinary medicine, there is immense treat, amidst stakeholders in the industry, about food health and safety and other civil and ethical concerns which can hinder this novel scientific breakthrough. The ethical concerns which include; theory of the Three Rs (Reduction of animal population, Refinement of enactments and farm managements to curtail affliction and despair, Replacement of animals with non-animal surrogate wherever necessary. Limitations regarding the application to veterinary practices are extensively discussed. This review has implication on the future of revolutionalisation of veterinary practice and increase in animal protein source for human consumption.

Keywords:

Introduction

Applications of Biotechnology to Veterinary Medicine

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Received September 06, 2016; **Accepted** September 19, 2016; **Published** September 26, 2016

Citation: Mohammed BR, Malang SK, Mailafia S, Agbede RIS (2016) Application of Biotechnology towards Diagnosis and Treatment in Veterinary Medicine in Africa: Potentials and Future Developments. J Biotechnol Biomater 6: 245. doi: 10.4172/2155-952X.1000245

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