Molecular and Biological characterization of Sudan isolates of Newcastle disease virus

By

Nagwa Osman Elshafie

A Thesis submitted in fulfillment of the requirement of Sudan University of Science and Technology for the Degree of Doctor of Philosophy (Ph. D) (Virology)

Supervisor
Prof. Dr. Babiker Elhaj Ali
College of Veterinary Medicine
Sudan University of Science and Technology

Co-supervisor
Prof. Dr. Mahasin Elnur Abdelrahman
Department of Virology
Institute of Veterinary Research (Soba)

November 2012