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Production of cell culture based anti- rabies vaccine in Ethiopia

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Rabies vaccines produced in mammalian neural tissues have the disadvantage of causing severe adverse reactions, at a rate estimated as 0.3–0.8 per thousand treated patients. Sheep brain derived Fermi type rabies vaccine is still being manufactured and utilized for the majority of exposed patients in Ethiopia. The WHO has recommended since the 90s that they be replaced by vaccines produced in substrates free from animal nervous tissues, as the latter are more immunogenic and, more importantly, safer. Therefore, production of a safer and effective cell culture based anti-rabies vaccine is needed. Initially the titer of the original virus should be known and multiplicity of infection of the viruses had to be optimized; therefore the virus was cultured on Vero cell lines. Titration for the original viruses donated by CDC, Atlanta was found to be 10^8 ID/ml for, and 10^7ID/ml for CVS. After selection of effective multiplicity, the viral master seed were once again passaged and labeled as working seed virus. Cells of 75×10^6 were infected with 0.001ID/cell of ERA P1 and incubated for 96 hrs at 37^0C in 5% CO_2 with roller in incubator. The viral suspensions stored at -80°c were sampled for titration and tissue culture infectivity dose (TCID) determination. This test is performed in vitro on 96 well plate using Vero cell lines. Based on the results it is conclude that, for ERA virus 0.001ID/cell with incubation period of 96h was selected as best titer for rabies vaccine production.

Biography

Birhanu Hurisa has completed his BSc at the age of 21 Gondar University. Currently is working his Postgraduate thesis at Haramaya University. He is young researcher at Ethiopian Health and Nutrition research Institute.

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