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## Adaptation of local rabies virus isolates to high growth titer to develop vaccine in Ethiopia

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Rabies is a zoonotic viral disease which causes acute encephalitis in humans and animals. The case is most severe in developing countries where cell culture derived anti-rabies vaccines are unaffordable or the available nervous tissue-derived vaccines are of questionable immunogenicity and may cause neurological complications. The aim of this study was to adapt local rabies virus isolates on BHK-21 and to study pathogenicity to intramuscular route of inoculation for canine vaccine development. The viruses were isolated from rabid dogs' brain and human saliva and adapted to Swiss albino mice brain and cell lines (Vero and BHK-21) by several blind passages. The virus titer were determined at each blind passage and followed for effective growth kinetics at different cell lines infection rates. For Pathogenicity study, mice were inoculated intramuscularly with 250MICLD50/0.1 ml of each adapted virus isolate and observed for 45 days. By titration, a minimum of 10 6.5 TCID50/ml (*in vitro*) and 10 4.5 MICLD50/0.03 ml (*in vivo*) virus titer were obtained. Only two virus isolates, human origin sululta (HOS) and dog origin (DO) caused 12.5% death. Death due to intramuscular inoculation can indicate the phylogroup origin of the viruses showing phylogroup I origin with decline in virulence due to several passages. Decline in pathogenicity may be due to adaptation of the viruses to mice brain and cell lines to increase virus infectivity titer. Generally, the exact genetic relation with fixed rabies virus strain should be studied by molecular techniques and canine anti-rabies vaccine should be developed from locally isolated viruses.

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