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Long double stranded RNA is present in scrapie infected cells and tissues

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the nature of the infectious agent causing scrapie and other Transmissible Spongiform Encephalopathies remains an enigma L despite decades of research efforts. The protein-only prion hypothesis posits that abnormal conformer of a host protein is the infectious agent. Virus and virino theories include host-independent nucleic acid as the genome of the infectious agent in addition to protein component (in case of virino a host protein and in case of virus a viral protein). Viral or sub-viral nucleic acids have long been sought in scrapie to explain the existence of multiple agent strains. Many different approaches were undertaken to find such nucleic acid. Despite that no scrapie specific nucleic acid sequences have been found in infected cells or tissues. Most viruses induce synthesis of long double stranded RNA (dsRNA) during their replication in cells. Therefore the presence of long dsRNA would be an indication of viral infection in cells. J2 monoclonal antibody against long dsRNA is a great tool for easy screening of cells and tissues for the presence of suspected unknown viral infection. This antibody has not been used for testing of scrapie infected tissues.

Evidence is presented here for long dsRNA in scrapie infected cells and tissues. Such dsRNA is also found in scrapie free tissue culture cells. In addition several bands of shorter dsRNA were found in both scrapie free and scrapie infected cells. A hypothesis is presented on satellite RNA nature of the scrapie agent silencing host bcl-2 antiapoptotic group genes through siRNAs derived from it. Identification of sequences of these dsRNA would falsify or prove this hypothesis

Biography

Yervand Karapetyan has completed his M.D. at the age of 24 years from Yerevan State Medical University and postdoctoral studies from The Scripps Research Institute, Scripps Florida . Currentrly he is the head of Histopathology Laboratory at the Oncological Dispensary in Stepanakert, Artsakh Republic. He has published one paper in Plos One in 2009 which has been cited more than ten times. Another paper is currently being submitted. He is an invited reviewer for Journal of Neurovirology. His letters to editors on hot topics of the issue of the nature of infectious agent in Transmissible Spongiform Encephalopathies were published by Science and PNAS:

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