Masaru Shimada et al., J Vaccines Vaccin 2015, 6:4
http://dx.doi.org/10.4172/2157-7560.C1.031

OMICS International
conferenceseries.com

7th Middle East - Global Summit and Expo on
Vaccines & Vaccination
September 28-29, 2015 Dubai, UAE

Prophylaxis and treatment of Alzheimer's disease by delivery of an adeno associated virus encoding a monoclonal antibody targeting the amyloid beta protein

Masaru Shimada and Kenji Okuda
Yokohama City University, Japan

We previously reported on a monoclonal antibody (mAb) that targeted amyloid beta (Aß) protein. Repeated injection of that mAb reduced the accumulation of Aß protein in the brain of human Aß transgenic mice (Tg2576). In the present study, we isolated the cDNA encoding the heavy and light chains of this mAb and the cDNA were sub-cloned into an adeno associated virus type 1 (AAV) vector with a 2A/furin adapter. A single intramuscular injection of 3.0×10^{10} viral genome of these AAV vectors into C57BL/6 mice generated serum anti AßAb levels up to 0.3 mg/ml. Anti AßAb levels in excess of 0.1 mg/ml were maintained for up to 64 weeks. The effect of AAV administration on Aß levels in vivo was examined. A significant decrease in Aß levels in the brain of Tg2576 mice treated at 5 months (prophylactic) or 10 months (therapeutic) of age was observed. Furthermore, this treatment greatly improved memory of Tg2576 model mice assessed by Morris Water Maze. These results support the use of AAV vector encoding anti-AßAb for the prevention and treatment of Alzheimer's disease.

Biography

Masaru Shimada has completed his PhD from Yokohama City University School of Medicine and Post-doctoral studies from Miami University School of Medicine. He is an Associate Professor of Yokohama City University School of Medicine. His interest lies in Vaccinology and virology. He has published more than 100 papers in reputed journals.

kqxin@yahoo.co.jp

Notes: