**Supplemental data**

**In vivo AlCl3 administration**

Distilled water was used as base for dissolving AlCl3 in treated animals therefore this was used as control in control animals. Moreover the distilled water had pH 7.2 which is very close to the pure water and therefore it contains very small amount of impurities which makes it a good control for the experiment.

In preliminary experiments it was found that daily water consumption of a 40g mouse is 10ml. Therefore according to 250mg/kg dose a 10mg/10ml solution of AlCl3 was prepared by dissolving AlCl3.6H2O in distilled water and was provided to animals *ad libitum* by replacing their normal drinking water with AlCl3 solution. The body weight and animal intake were monitored daily. The AlCl3 solution was prepared fresh every second day over the experimental period and fresh solution was replaced in animal water bottles.

**Quantitative analysis of neurodegeneration**

In electromicrpgraphs the scale was 100μm. Therefore according to this scale a box of 100x50μm (area of 5000μm2) was drawn at three randomly selected sites in each layer of hippocampus i.e. CA1, CA2, CA3 and dentate gyrus. The cell number in area covered by the box was counted by using NIH software “Image J”. As the thickness of section was only 3μm therefore all the cells were visible and that's why thickness was not considered in area calculation. Later the average of values from all three areas in each layer of hippocampus were taken and were plotted.

Fig 3.17.tif

a

**M1C17 (2) CA1,DG.TIFM1C17 (2) CA2,CA3.TIF**

c

b

**S1:** Histological examination of AD mouse model and control mouse hippocampus. (a) Presentation of the mouse brain atlas coordinates from where the section was taken for histological examination and quantification of cell number (modified from Paxinos and Franklin 2007). (b) Dentate gyrus and CA1 area of hippocampus. (c) CA2 and CA3 area of hippocampus.

**Bibiliography**

K.B.J. Franklin, G. Paxinos, The mouse brain in stereotaxic coordinates, Elsevier publishers, 3rd edition. 2007.