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## Rice bran oil improves behavioral disorder in AlCl<sub>3</sub> induced dementia

Md Mahbubur Rahman, Waeza Tahsin Chowdhury, Md Abdullah Potoi, Saba Reza, Mahmuda Arefin Mumu, Mahabub Alam, Abdirahman Adam Ibrahim Nur, Afrida Fyroz, Sharmin Sultana, Asha Akter and Monjur Murshid  
North South University, Bangladesh

The prevalence of Alzheimer's diseases is quite high in developed countries as well as in low income countries. Dementia is one of the major phenotypes observed in Alzheimer's disease. The treatment options for Alzheimer's disease and dementia are not devoid of flaws and drugs with optimum effects are still to be discovered. Natural products on the other hand are a good source of lead compounds. Here, we investigated the effect of rice bran oil (RBO) on a mouse model of dementia. Eight to ten weeks old Swiss albino mice were injected with low dose AlCl<sub>3</sub> for two weeks to induce mild dementia. Morris water maze (MWM) and radial arm maze (RAM) test were performed to evaluate the memory function. We also measured oxidative stress in brain. In the RAM test, the number of total error increased substantially after treatment with AlCl<sub>3</sub>. However, when we treat mice with RBO, a significant reduction was observed. In MWM test, latency to the target increases significantly after AlCl<sub>3</sub> injection which was reversed upon treatment with RBO. In open field test, we noticed that AlCl<sub>3</sub> treated mice travelled longer distance than the one with RBO. Lipid peroxidation was significantly higher in the hippocampus of disease group which was reduced in RBO group. Oxidative stress marker NO was also significantly reduced with RBO treatment compared to the disease group. Therefore, we conclude that rice bran oil improves spatial memory function associated with reduced oxidative stress and lipid peroxidation.

### Biography

Md Mahbubur Rahman is a teaching professional with progressive experience in research. He has demonstrated high level of ingenuity in research in the field of Neuropharmacology. In 2013, Dr. Rahman received his doctoral degree from the Heidelberg University, Germany. He is an expert in animal model of stroke. He completed MS in Pharmaceutical Sciences and Bachelor of Pharmacy from Jahangirnagar University, Dhaka in 2008 and 2006 respectively. Currently, he is working as an Assistant Professor and focusing his research on developing an animal model in an attempt to figure out the impact of food habits on neurodegenerative disorders.

rahman.mahbubur@northsouth.edu

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