

P-413**Overexpression of Protein Kinase Mzeta in the hippocampal dentate gyrus maintains long term plasticity against entorhinal amyloidopathy in freely moving rats****Shayan Aliakbari¹, Hamid Gholami Pournadie^{*1}, Niloufar amini², Mohammad Sayyah¹, Fereshteh Motamedi³, Naser Naghdi¹.**

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Introduction: Entorhinal cortex (EC) is one of the first cerebral regions affected in the early phase of Alzheimer's disease (AD). Soluble amyloid beta (A β) causes aberrant synaptic transmission in AD models. Protein Kinase M ζ (PKM ζ) is involved in long lasting synaptic plasticity.

Materials and methods: A β 1-42 or vehicle was bilaterally microinjected into the EC of the male Wistar rats and then, two stainless steel electrodes were implanted into the perforant pathway and DG. They were fixed to the skull after obtaining suitable field potential responses in the DG. After one week, 2 μ l of lentiviral vector was injected into the DG, and one week later, LTP was induced in freely moving animals and the LTP persistence was monitored in 90 min, 24 h and 7 days.

Results: in the control group, DG-LTP exhibited the largest change at early time (90 min) and remained almost stable until 7 days. In the A β treated group, it was smaller initially than the control group, and faded within 3 days. However, induction of PKM ζ expression in the DG resulted in facilitation of LTP with the greatest change at 24 h, and LTP robustly remained stable until 7 days. This potentiated effect was reversed by zeta inhibitory peptide (ZIP), a specific inhibitor of PKM ζ .

Conclusion: PKM ζ dependent pathway could be a potential therapeutic target to combat synaptic failure in the early phase of AD.

Keywords: long term potentiation, Alzheimer's disease, protein kinase Mzeta, dentate gyrus, freely moving

P-414**The effect of hydro-alcoholic extract of Mentha pulegium on pain and seizure induced by pentylenetetrazol in male mice****Mahdi Alizadeh^{1*}, Fatemeh Taleahmad¹, Fatemeh Nabi¹, Fariba Ansari¹, Zahra Kiasalari², Mohsen Khalili^{2*}**

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Background and Objective: In recent years, the use of medicinal plants has increased instead of chemical drugs due to fewer side effects and more diverse compounds. The aim of this study was to witness the analgesic and anticonvulsant effect of Puneh plant.

Materials and Methods: In this study, we used 40 male mice, and the PTZ test for evaluating the anticonvulsant effects and formalin and tail immersion tests in hot water to determine the anti-nociceptive effect of the plant were used.

Results: Hydro-alcoholic extracts of Pune leaf significantly decreased pain in the acute and chronic phase in the formalin test, which had the most analgesic effect in 800 mg /kg and all doses were effective in acute pain. Also, in the PTZ test, the anticonvulsant effect in doses of 200 and 600 mg /kg was shown. However, In tail immersion test, the acute pain was unaffected

Conclusion: The results of this study indicated that hydro- alcoholic extract of Pune leaf can reduce chronic and acute pain and also seizure onset time.

Key words: pain, seizure, Ant nociceptive, Mentha pulegium, Mice