and anxiolytic properties in several studies. However there is limited data showing the beneficial effect of linalool following exposure to chronic stress. The aim of the present study was to investigate the effect of linalool in chronic stress rats on behaviour related depressive disorder and BDNF protein in hippocampus. Male Wistar rats were randomly divided into 5 groups, 1) Tween 80 + home cage (HC) 2) Tween 80 + restrain stress (RS) 3) linalool 50 mg/kg + RS 4) linalool 160 mg/kg + RS and 5) linalool 500 mg/kg + RS. Either Tween 80 or linalool was intraperitoneally injected to rats daily for two weeks. Some rats were housed in home cage but the others induced chronic restrained stress (15 min daily) for two weeks. At the end of the treatment, rats were assessed for depressive-like behavior using the forced swimming test. Then, the rats were immediately decapitated and hippocampus was removed for the measurement of BDNF protein by ELISA. Restrained rats injected with linalool 500 mg/kg for two weeks significantly reduced immobility time (p<0.05) but increased climbing time (p<0.05) compared their controls, suggesting that this dose produced antidepressant activity. Linalool had no effect on the level of BDNF protein in hippocampus. Therefore, these findings suggest that linalool decreases behaviour related depressive disorder but has no effect on hippocampal BDNF in chronic restrained stress.

**PS121**

Evaluation of extrapyramidal side effects in the treatment of behavioral and psychological symptoms of dementia (BPSD): Interactions between anti-Alzheimer drugs and antidepressants

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**Abstract**

**Background/Objectives:** Antidepressants are often used in conjunction with anti-Alzheimer drugs to treat the behavioral and psychological symptoms of dementia (BPSD). Here, we studied the interactions between anti-Alzheimer drugs, cholinesterase inhibitors (ChEIs), and antidepressants in inducing extrapyramidal side effects (EPS).

**Methods:** Male ddY mice were used. The pole test, we examined the actions of serotonin reuptake inhibitors (SSRIs), fluoxetine and paroxetine, a serotonin and noradrenaline reuptake inhibitor (SNRI) milnacipran, a noradrenergic and specific serotonergic antidepressant (NaSSA) mirtazapine in modulating the ChEIs (galantamine and donepezil)-induced bradykinesia.

**Results:** Both fluoxetine and paroxetine significantly potentiated galantamine-induced bradykinesia in a synergistic manner. The EPS augmentation by fluoxetine was antagonized by ketanserin (5-HT2 antagonist) and SB-258585 (5-HT2 antagonist), but not by ondansetron (5-HT3 antagonist). In contrast to SSRIs, milnacipran and mirtazapine failed to augment galantamine-induced EPS. In addition, combined treatment of prazosin (α1 antagonist), but not yohimbine (α2 antagonist), with milnacipran significantly potentiated galantamine-induced EPS.

**Conclusion:** The present results indicate that SSRIs and ChEIs synergistically facilitate the EPS induction, the activation of 5-HT receptors, and the treatment of EPS. The coadministration of ChEIs with SNRIs (or NaSSA) is recommended in terms of EPS liability for the BPSD therapy, where the activation of α1 receptors by SNRIs seems to reduce EPS.

**PS122**

Overexpression of N-acetyltransferase Shati/Nat8l in the dorsal striatum induces depression-like behaviors in mice.

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**Abstract**

Depression is one of the most serious psychological disorders, but its pathogenesis remains unclear and the current medical treatment is mainly restrictive effect. We have identified Shati/Nat8l, which is containing a well-conserved N-acetyltransferase (NaT8l) sequence, in the brain of psychos affective animal model. Shati/Nat8l overexpresses in the dorsal striatum of the depression mice significantly increased compared with that of control mice. Therefore, mice were microinjected Shati/Nat8l-inserted or non-inserted (Mock) adeno-associated virus vectors into the dorsal striatum. The Shati/Nat8l-overexpressed mice exhibited increased social interaction and sucrose preference after subthreshold social defeat stress as the exposure to aggressor ICR mouse for 5 min on only one day, which showed normal behaviors in the Mock mice. These two phenotypical impairments in the Shati/Nat8l-overexpressed mice were ameliorated by treatment with a selective serotonin reuptake inhibitor fluvoxamine at the dose of 10mg/kg i.p., which has no effect in the Mock mice.

These findings suggest that Shati/Nat8l in the striatum play an important role in depression-like behaviors including diminished sociability and pleasure by regulating the serotonergic neuronal system.

**PS123**

Altered peptide ligands of myelin basic protein produce persistent antidepressant-like effects

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**Abstract**

Cytokine levels were generally changed in both depressed patients and animal models. Altered peptide ligand (APL) of myelin basic protein (MBP) regulates levels of various cytokines,