Background:
The forced swimming test (FST) is the most widely used model for assessing pharmacological antidepressant activity [1,2]. 1,2,3,4-Tetrahydroisoquinoline (TIQ) and its derivatives are exogenous and endogenous amines present in the mammalian brain. They may be natural regulators of monoaminergic systems with a visible neuroprotective potency how it was recently demonstrated in the rodent brain [3].

Materials and Methods:

ANIMALS
The experiments were carried out on male Wistar rats (Han, Charles River) weighting 240-270g, kept under standard laboratory food and tap water, at room temperature of approximately 22°C, in a natural day-night cycle.

Results:
The inhibition of DA re-uptake in rat striatum

The rate of NA metabolism in rat brainstem

The rate of 5-HT metabolism in rat striatum

The effect of TIQ on rat behavior in FST

IMI ★ climbing time
(activation of NA system [2])

TIQ ★ swimming time
(activation of 5-HT system [2])

Conclusions:
TIQ possesses marked antidepressant-like effect in FST with potency comparable to imipramine.

In that light and additionally taken into account its neuroprotective potential of action in the brain TIQ may be useful in clinical practice as antidepressant drugs in patients.

References: