

Cotinine: A Therapy for Memory Extinction in Post-traumatic Stress Disorder

Mendoza C.

Barreto G.E.

Iarkov A.

Tarasov V.V.

Aliev G.

Echeverria V.

Post-traumatic stress disorder (PTSD) is a mental disorder that may develop after exposure to exceptionally threatening or unescapable horrifying events. Actual therapies fail to alleviate the emotional suffering and cognitive impairment associated with this disorder, mostly because they are ineffective in treating the failure to extinguish trauma memories in a great percentage of those affected. In this review, current behavioral, cellular, and molecular evidence supporting the use of cotinine for treating PTSD are reviewed. The role of the positive modulation by cotinine of the nicotinic acetylcholine receptors (nAChRs) and their downstream effectors, the protection of astroglia, and the inhibition of microglia in the PTSD brain are also discussed. © 2018, Springer Science+Business Media, LLC, part of Springer Nature.

Cotinine

Extinction

Fear

Inflammation

Nicotinic receptor

Post-traumatic stress disorder

cotinine

nicotinic receptor

brain region

fear

functional connectivity

human

memory

mental stress

nerve cell plasticity

nonhuman

posttraumatic stress disorder

psychotherapy

reinforcement

Review