

# Effects of phosphodiesterase 4 inhibition after a short memory retrieval of contextual fear conditioning in rats

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## STATEMENTS DOCTORAL DEFENSE

**Thesis Title:** Effects of Phosphodiesterase 4 Inhibition After a Short Memory Retrieval of Contextual Fear Conditioning in Rats

**Ph.D. Candidate:** Jeferson Machado Batista Sohn

1. The inhibition of phosphodiesterase 4 after a short fear memory retrieval changes the outcome from reconsolidation to extinction.
2. The inhibition of phosphodiesterase 4 with roflumilast, even at different stages of fear processing, results in decreased fear expression.
3. The inhibition of phosphodiesterase 4 after a short fear memory retrieval changes the time required to induce extinction upon re-exposure.
4. The inhibition of phosphodiesterase 4 favors the reconsolidation of object recognition memory.
5. The phosphodiesterase 4 inhibition improves both emotional and non-emotional learning
6. *"Memory is everything. Without it, we are nothing"*. **Eric Kandel**
7. *"Memory is an art. We cannot remember everything, and the things we do remember in a way that is colored by our emotions and experiences"*. **Ivan Izquierdo**
8. *"Any man could, if he were so inclined, be the sculptor of his own brain"*. **Santiago Ramón y Cajal**
9. *"As a Christian and a neuroscientist, I believe that the study of the brain reveals the marvelous complexity and capability of God's creation. Understanding the brain enriches my faith and brings a deeper appreciation for the Creator"*. **Warren S. Brown**
10. The findings of the study provide evidence that phosphodiesterase 4 inhibition after a brief retrieval alters the sensitivity of the memory to extinction. This may benefit interventions in post-traumatic stress patients, as it makes the fear memory more susceptible to therapeutic interventions.