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### Objectives

The main objective of the present work was to develop a bidirectional selective breeding program employing Wistar rats, using as selection criterion the conditioned freezing behavior in response to contextual cues previously associated with footshocks. In addition, we propose the introduction of a third group of randomly mated rats (RND) in the selective breeding program, which could serve as a control for the selected lines. In order to contextualize this newly developed model, we decided to revise, based on the literature, the behavioral results of 8 selected lines with contrasting levels of anxiety-related responses in 11 animal tests of anxiety. Once a confident behavioral divergence between CHF (Carioca High Freezing) and CLF (Carioca Low Freezing) selected lines was established, we also aimed to verify several aspects of the fear conditioning paradigm, such as extinction and reacquisition of conditioned freezing behavior, as well as the dissociation between contextual X phasic fear, in these two new animal lines. It is our hypothesis that these selected lines could be a suitable model in the understanding the pathophysiology of fear learning, hence expanding our knowledge of the genetic basis of conditioned fear.