INTRODUCTION: For persistence of long-term memory (LTM), a new event of consolidation is necessary, 12 hours after the acquisition. Spermidine is an endogenous polyamine that activates the N-methyl-D-aspartate receptor (NMDAr) function and facilitates memory. There is no studies investigating the role of spermidine in the persistence of LTM. OBJECTIVES: In the current study we investigated whether intrahippocampal administration of spermidine and arcarine, antagonist of polyamines binding site of N-methyl-D-aspartate receptor (NMDAr), alter the persistence of the memory of contextual fear-conditioning task in rats. MATERIAL AND METHODS: Each animal was subjected to a single fear-conditioning training session, as described by Rubin et al (2004), with some modifications. In brief, the rat was placed in the conditioning chamber and habituated to the apparatus for 3 min. Immediately after habituation, three 1 s, 0.4 mA footshocks were delivered. 12 hours post-training the animals received, an intrahippocampal injection of vehicle (saline), spermidine (0.02-2 nmol/sítio), arcarine (0.02-2 nmol/sítio) or arcarine (0.2 nmol/sítio) plus spermidine (2 nmol/sítio) and 2 or 7 days after training, each rat was placed back in the conditioning chamber and test session was performed. During test, no shock was given, and the freezing was assessed. RESULTS: Spermidine (2 nmol/side) increased the contextual freezing of animals tested 7 days after training, but not 2 days after training, following the literature reports (Bekinschtein et al., 2007; Bekinschtein et al., 2008; Bekinschtein et al., 2010; Parfitt et al., 2012; Rossato et al., 2009). Arcarine (2 nmol/side) promoted the opposite effect. Arcarine, (0.2 nmol/side), prevented the increase of contextual freezing induced by spermidine. DISCUSSION: The improvement of memory persistence induced by spermidine is in accordance with the similar effect induced by compounds that increase NMDAr transmission (Rossato et al., 2009). CONCLUSION: These results suggest that endogenous polyamines improves persistence of long-term memory storage.