%FOESPTPNBM $VSDVNJO /BOPGPSNVMBUJPO "U .PSQIJOF 8JUIESBXBM 4JHOT JO 3BUT

Masoumeh Ghaemi-Jandabi [1], Hakime Abdollahi [1], Hossein Azizi [1], Majid Sadeghizadeh [2]* and Saeed Semnanian [1]*

[1]Department of Physiology, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran
[2]Department of Genetics, School of Biological Sciences, Tarbiat Modares University, Tehran, Iran

Keywords:Dendrosomal curcumin; Morphine withdrawal; Rat

Introduction

Chronic use of opioid drugs leads to the development of dependence and tolerance which in turn limits their therapeutic application and brings about serious social and health issues [1]. In many models of drug dependence, positive and negative reinforcement are two major components. Positive reinforcement of euphoric e ects results in a compulsive and relentless desire for drug taking while negative reinforcement of withdrawal signs occurs following cessation of opioid receiving [2]. Opiate withdrawal syndrome is a multifaceted phenomenon involving various regions of the brain and is characterized by physiological and behavioral symptoms [3–7]. Curcumin is a hydrophobic compound derived from the rhizome of Curcuma longa, which is commonly used as a spice in most Asian countries [8]. Curcumin has been reported to have anti-in ammatory, antioxidant, antitumor, antinociceptive and neuroprotective activities [9,10]. e ndings have been shown that daily administration of curcumin could prevent morphine analgesic tolerance [11]. However, low water solubility, poor uptake and tissue distribution remain major impediments, limiting the application of curcumin as treatment agent [12]. Recently, scientists have exposed several strategies, such as loading synthetic analogs from turmeric, designing metabolic inhibitors and liposomal formulations, and nanoparticles of curcumin, to overcome these problems [13-15]. Dendrosome was presented as a novel neutral, amphipathic, and biodegrad¬ablenanocarrier for a gene delivery system [16,17]. e high potential of dendrosome as a gene porter has led to the hypothesis that it can be applied as a vehicle for curcumin delivery. In this study, we aimed to investigate the e ect of intraperitoneal (i.p.) administration of Dendrosomal curcumin (DNC) on the behavioral signs of morphine withdrawal syndrome.

reduction was not statistically signi cant. e number of rats that

0DOGRQDGR 5 6WLQXV / *ROG /+ .RRE *) 5ROH RI GLIIHUHQW EUDLQ VWUXFWXUHV LQ WKH H[SUHVVLRQ RI WKH SK\VLFDO PRUSKLQH ZLWKGUDZDO V\QGURPH - 3KDUPDFRO ([S 7KHU

5HGPRQG '(-U .U\VWDO -+ 0XOWLSOH PHFKDQLVPV RI ZLWKGUDZDO IURP RSLRLG GUXJV $QQX 5HY 1HXURVFL

6KDUPD 5$ *HVFKHU $- 6WHZDUG :3 &XUFXPLQ WKH VWRU\ VR IDU (XU - &DQFHU

0RWWHUOLQL 5)RUHVWL 5 %DVVL 5 *UHHQ &- &XUFXPLQ DQ DQWLR[LGDQW DQG DQWL LQÀDPPDWRU\ DJHQW LQGXFHV KHPH R[\JHQDVH DQG SURWHFWV HQGRWKHOLDO FHOOV DJDLQVW R[LGDWLYH VWUHVV)UHH 5DGLF %LRO 0HG

7KL\DJDUDMDQ 0 6KDUPD 66 1HXURSURWHFWLYH HIIHFW RI FXUFXPLQ LQ PLGGOH FHUHEUDO DUWHU\ RFFOXVLRQ LQGXFHG IRFDO FHUHEUDO LVFKHPLD LQ UDWV /LIH 6FL

0DWVXVKLWD < 8HGD + &XUFXPLQ EORFNV FKURQLF PRUSKLR:€ÀÖQD À`PLD ``L` € 0PLD `` — p%`•