产品名称：**L-苯肾上腺素**
产品别名：**去氧肾上腺素；(R)-(-)-Phenylephrine**

生物活性：	
Description	(R)-(-)-Phenylephrine is a selective α_1-adrenoceptor agonist primarily used as a decongestant.
In Vitro	(R)-(-)-Phenylephrine is a selective α1-adrenoceptor agonist with pKi values of 5.86, 4.87 and 4.70 for α1D, α1B and α_{1A} receptors respectively[1][2]. Phenylephrine promotes cardiac fibroblast proliferation. Phenylephrine activates CaN and evokes NFAT3 nuclear translocation. It suggests that the $Ca^{(2+)}$/CaN/NFAT pathway mediates phenylephrine -induced cardiac fibroblast proliferation, and this pathway might be a possible therapeutic target in cardiac fibrosis[3].
In Vivo	Perfusion of hearts with 100 μM phenylephrine causes a rapid (maximal at 10 min) 12-fold activation of two p38-MAPK isoforms. α_1-adrenoceptor agonists such as phenylephrine increase the contractility of the heart. Phenylephrine also activates SAPKs/JNKs in neonatal ventricular myocytes[4]. Phenylephrine could increase the alveolar fluid clearance in high tidal volume-ventilated rats and accelerate the absorption of pulmonary edema[5].
References	[1]. Ford AP, et al. Pharmacological pleiotropism of the human recombinant alpha1A-adrenoceptor: implications foralpha1-adrenoceptor classification. Br J Pharmacol. 1997 Jul;121(6):1127-35. [2]. Minneman KP, et al. Selectivity of agonists for cloned alpha 1-adrenergic receptor subtypes. Mol Pharmacol. 1994 Nov;46(5):929-36. [3]. Wang J, et al. Phenylephrine promotes cardiac fibroblast proliferation through calcineurin-NFAT pathway. Front Biosci (Landmark Ed). 2016 Jan 1;21:502-13. [4]. Lazou A, et al. Activation of mitogen-activated protein kinases (p38-MAPKs, SAPKs/JNKs and ERKs) by the G-protein-coupled receptor agonist phenylephrine in the perfused rat heart. Biochem J. 1998 Jun 1;332 (Pt 2):459-65. [5]. Li NJ, et al. Effect of phenylephrine on alveolar fluid clearance in ventilator-induced lung injury. Chin Med Sci J. 2013 Mar;28(1):1-6.

实验参考：	
Animal Administration	Rats: A total of 170 male Wistar rats are randomLy allocated into 17 groups (n=10) using random number tables. Short-term (40 minutes) mechanical ventilation with high tidal volume is performed to induce lung injury, impair active Na^+ transport and lung liquid clearance in the rats. Unventilated rats serves as controls. To demonstrate the effect of phenylephrine on alveolar fluid clearance, phenylephrine at different concentrations (10, 1, 0.1, 0.01, and 0.001 μM) is injected into the alveolar space of the HVT ventilated rats[5].
References	[1]. Ford AP, et al. Pharmacological pleiotropism of the human recombinant alpha1A-adrenoceptor: implications foralpha1-adrenoceptor classification. Br J Pharmacol. 1997 Jul;121(6):1127-35. [2]. Minneman KP, et al. Selectivity of agonists for cloned alpha 1-adrenergic receptor subtypes. Mol Pharmacol. 1994 Nov;46(5):929-36. [3]. Wang J, et al. Phenylephrine promotes cardiac fibroblast proliferation through calcineurin-NFAT pathway. Front Biosci (Landmark Ed). 2016 Jan 1;21:502-13. [4]. Lazou A, et al. Activation of mitogen-activated protein kinases (p38-MAPKs, SAPKs/JNKs and ERKs) by the G-protein-coupled receptor agonist phenylephrine in the perfused rat heart. Biochem J. 1998 Jun 1;332 (Pt 2):459-65.

	[5]. Li NJ, et al. Effect of phenylephrine on alveolar fluid clearance in ventilator-induced lung injury. Chin Med Sci J. 2013 Mar;28(1):1-6.