

# 花蓮慈濟醫院研究部

## 神經損傷與治療實驗室

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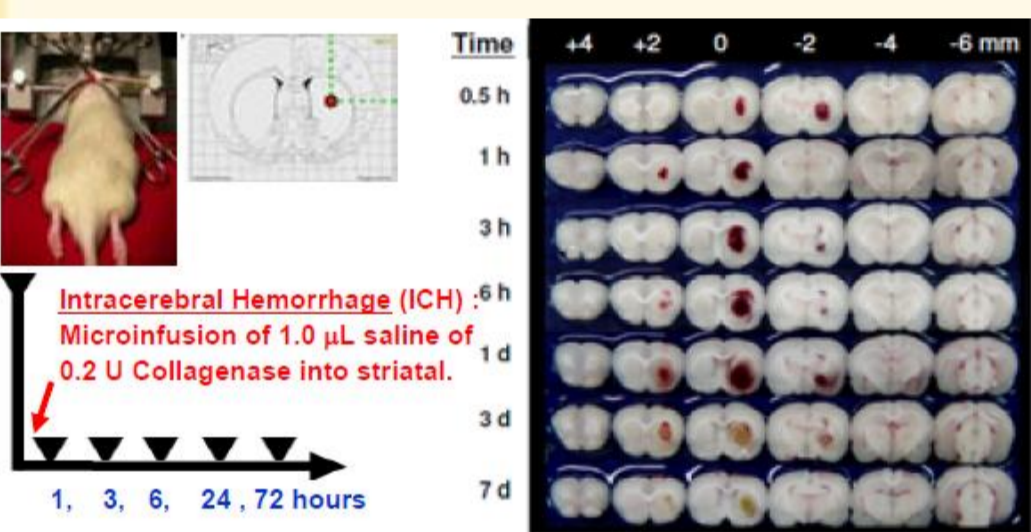
### 研究簡介

本實驗室以動物腦損傷(腦缺血&腦溢血)為實驗研究平台探討神經損傷的致病機轉，進而研發新的治療方法(藥物&幹細胞)。

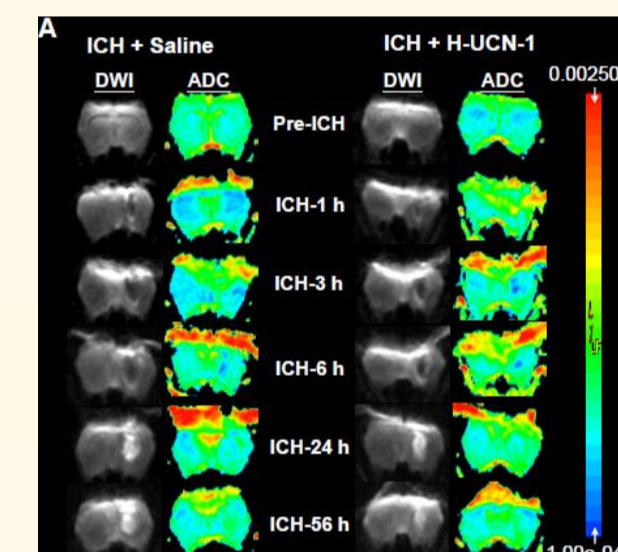
### 實驗研究平台與技術

- 大白鼠腦溢血誘發手術 (Collagenase Model & Blood Infusion Model)
- 大白鼠腦缺血誘發手術 (Middle Cerebral Artery Ligation Model & ET-1 Occlusion Model)
- 神經功能性損傷行為評估平台 (e.g. mNSS, RotaRod, Swing Test, Patch Test & etc.)
- 神經生理分析平台 [Cerebral Blood Flow (Perfusion) Monitor, Intracranial Pressure Monitor, Neurotransmitters Monitor etc.]
- 心血管功能及血液檢測平台 (Cardiovascular Parameters, CBC, Blood Gas & Serum Biochemistry Analyzer)
- 腦損傷評估平台 (Brain Edema, BBB Disruption, Hematoma Expansion, & Neuroinflammation)
- 神經幹細胞培養及分化 (Neural Stem Cells Proliferation & Differentiation)
- 基因轉殖-體外及活體內 (Gene Transfection-*in vitro* & *in vivo*)

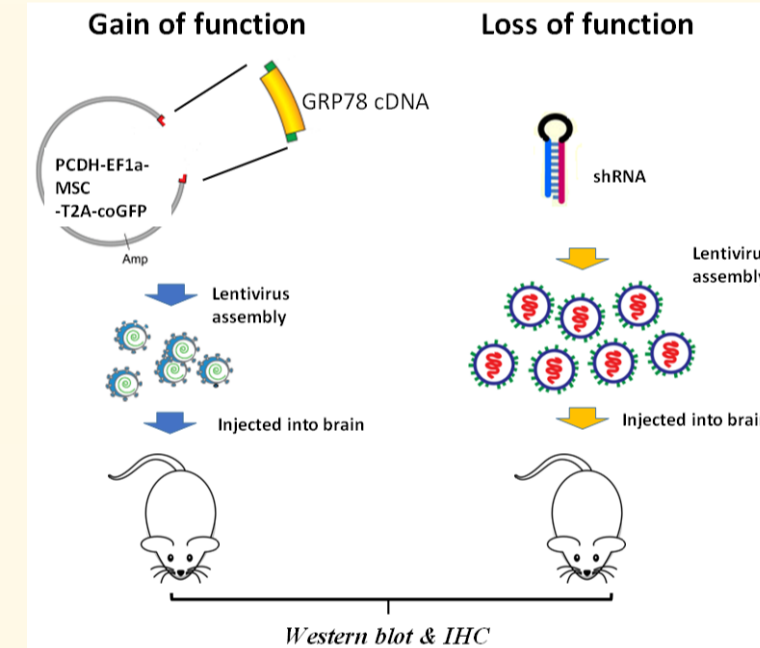
Intracerebral Hemorrhage Model



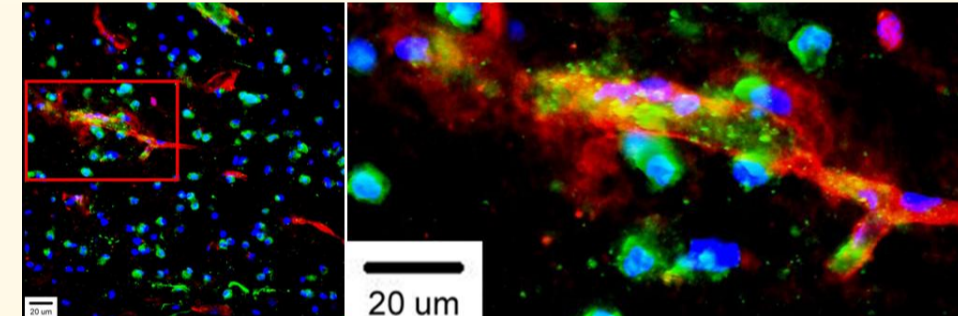
MRI: Cerebral Perfusion



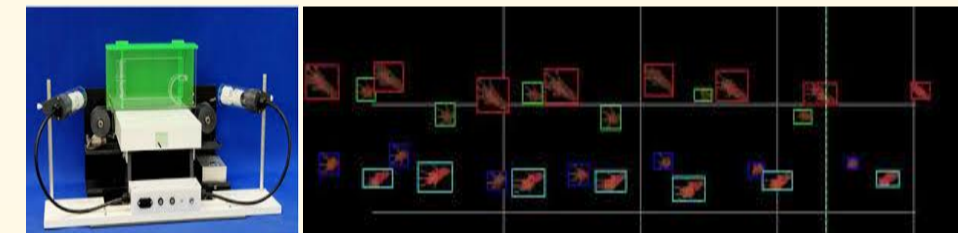
Gene Transfection: *in vivo*



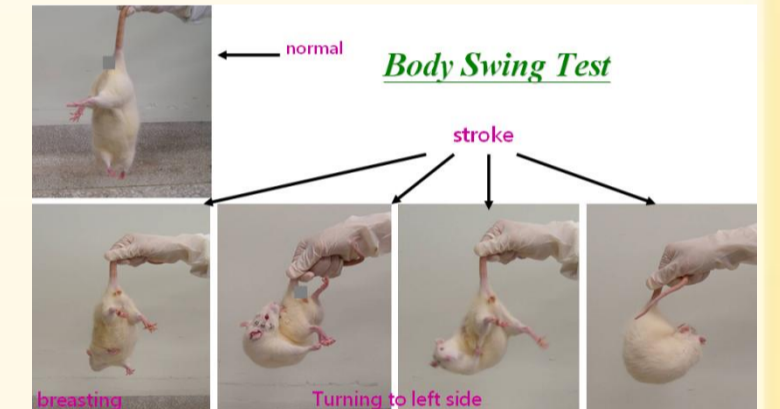
Immunohistochemical Staining



Treadscan



Neurological Function Assays



Locomotor Activity



### 執行中之計畫與經費來源

計畫名稱	擔任之工作	起迄年月	補助機構	補助金額(每年)
以腦溢血大鼠探討尿皮質素調控神經物質傳導作用(TCRD106-40)	主持人	2017/01/01 ~2017/12/31	慈濟醫院	NT\$720,000
從脊髓與背根神經節的層面，探討壓力造成表觀遺傳學的改變，在急性疼痛轉變為慢性疼痛機制上扮演的角色(TCRD106-24)	共同主持人	2017/01/01 ~2017/12/31	慈濟醫院	NT\$679,502
探討尿皮質素調控腦缺血引發的神經發炎、神經再生與血管新生(TCMMP105-06-01)	主持人	2016/07/01 ~2019/06/30	慈濟基金會	NT\$950,000
尿皮質素做為神經損傷與神經退化疾病治療的臨床前研究SC-2-1 (106)	共同主持人	2017/01/01 ~2017/12/31	慈濟基金會	NT\$1,000,000

### 研究成果

#### 期刊論文

1. Liew HK, Cheng HY, Huang LC, Li CW, Peng HF, Yang HI, Lin PB, Kuo JS, Pang CY\*. Acute Alcohol Intoxication Aggravates Brain Injury Caused by Intracerebral Hemorrhage in Rats. *Journal of Stroke and Cerebrovascular Disease*, 2015 Sep 16. pii: S1052-3057 (15) 00457-7.
2. Liew HK, Huang LC, Yang HI, Peng HF, Li KW, Tsai AP, Chen SY, Kuo JS, Pang CY\*. Therapeutic effects of human urocortin-1, -2 and -3 in intracerebral hemorrhage of rats. *Neuropeptides*. 2015 Aug;52:89-96.
3. Liew HK, Kuo JS, Wang JY\*, Pang CY\*. Granulocyte-colony Stimulating Factor Increases Cerebral Blood Flow via a NO Surge Mediated by Akt/eNOS Pathway to Reduce Ischemic Injury. *Scientific World Journal*, 2015;2015:657932.
4. Huang HY, Chiu TL, Chang HF, Hsu HR, Pang CY, Liew HK, Wang MJ\*. Epigenetic Regulation Contributes to Urocortin-Enhanced Midbrain Dopaminergic Neuron Differentiation. *Stem Cells*, 2015 May;33(5):1601-17.
5. Chuang JY, Liew HK, Pang CY, Kuo JS\*. Size-controllable striatal lesions for evaluation of neuroprotective agents in rats. *Tzu Chi Medical Journal* 2013 March; 25(1):23-28. (Equal First)
6. Liew HK, Hsu CW, Kuo JS, Pang CY\*. Granulocyte-colony stimulating factor reduces striatal dopamine accumulation caused by cerebral ischemia. *Tzu Chi Medical Journal* 24(2012):181-185.
7. Yang KL\*, Lee JT, Pang CY, Lee TY, Chen SP, Liew HK, Chen SY, Chen TY, Lin PY. Human adipose-derived stem cells for the treatment of intracerebral hemorrhage in rats via femoral intravenous injection. *Cell Mol Biol Lett*. 2012 Sep;17(3):376-92.
8. Liew HK, Hsu CW, Wang MJ, Kuo JS, Li TY, Peng HF, Wang JY\*, Pang CY\*. Therapeutic benefit of urocortin in rats with intracerebral hemorrhage. *J Neurosurg*. 2012 Jan;116(1):193-200.
9. Liew HK, Pang CY, Hsu CW, Wang MJ, Li TY, Peng HF, Kuo JS, Wang JY\*. Systemic administration of urocortin after intracerebral hemorrhage reduces neurological deficits and neuroinflammation in rats. *J Neuroinflammation*. 2012 Jan 19;9:13.