Focused shockwave induced BBB open & Transfection

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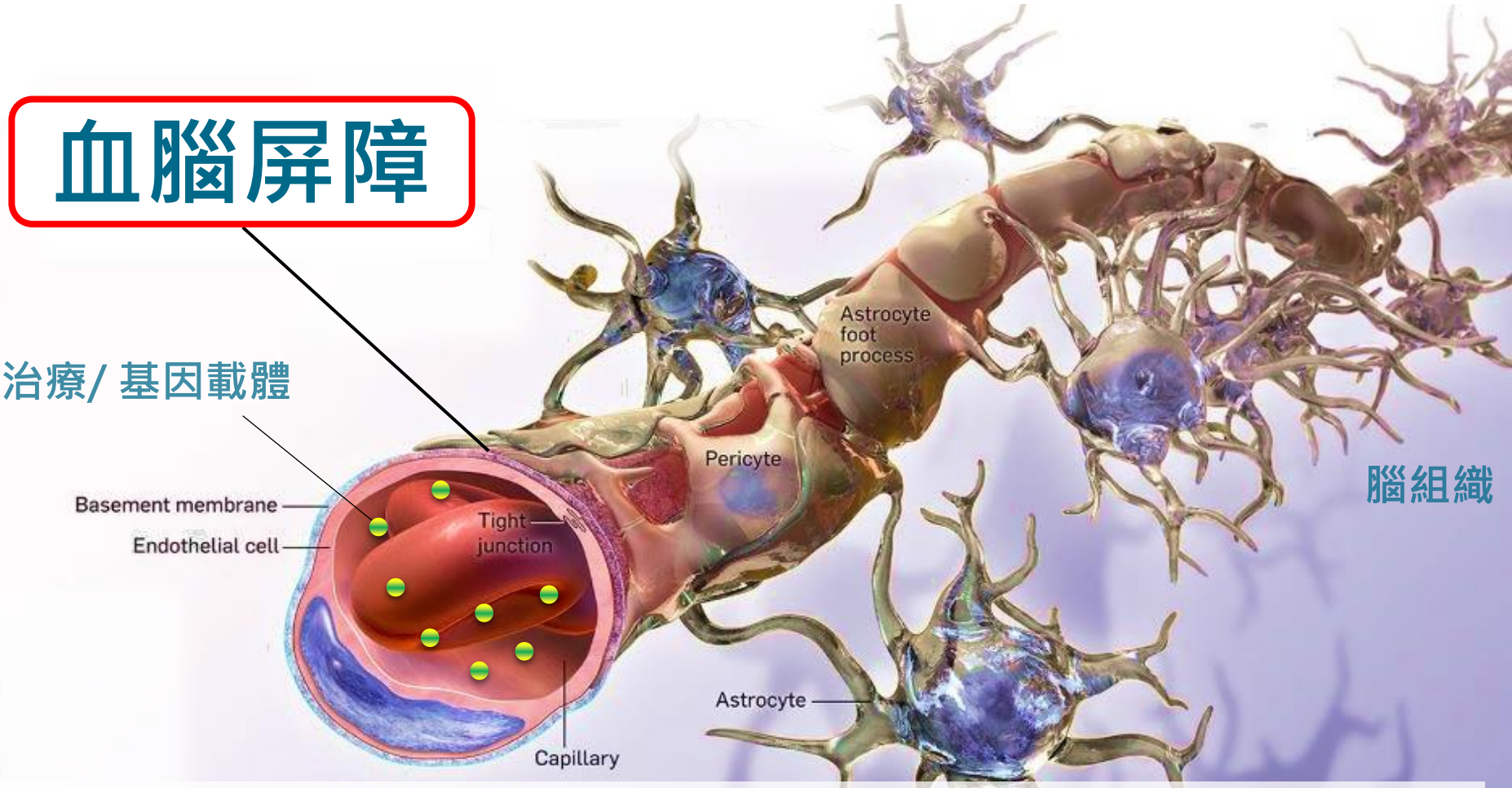
未滿足需求：有效輸送治療因子 至 腦部

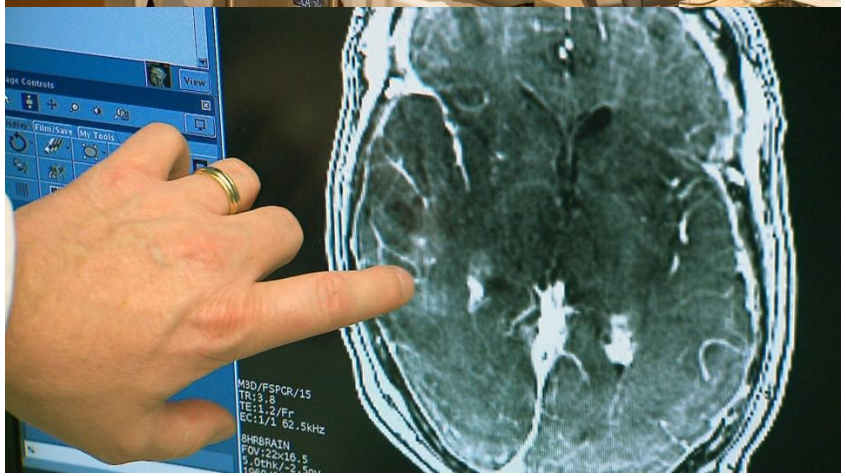


"Over **98 %** of current clinical therapeutics (or > 400 Da) cannot be effectively delivered into brain parenchyma … due to tight separation of circulating blood from brain extracellular fluid in CNS."

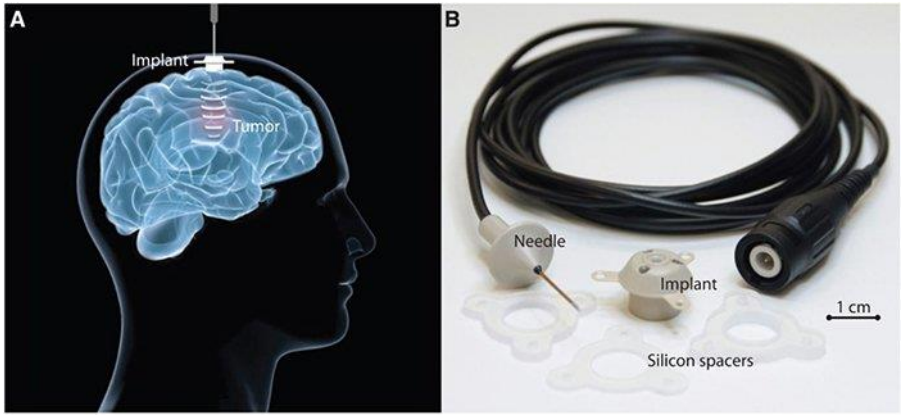
Ref: http://blog.medillsb.com/audra-geras-the-blood-brain-barrier/

聚焦式超音波技術已獲臨床測試

Insightec Inc, USA



Cartherra Inc, France



NaviFUS Inc. Taiwan

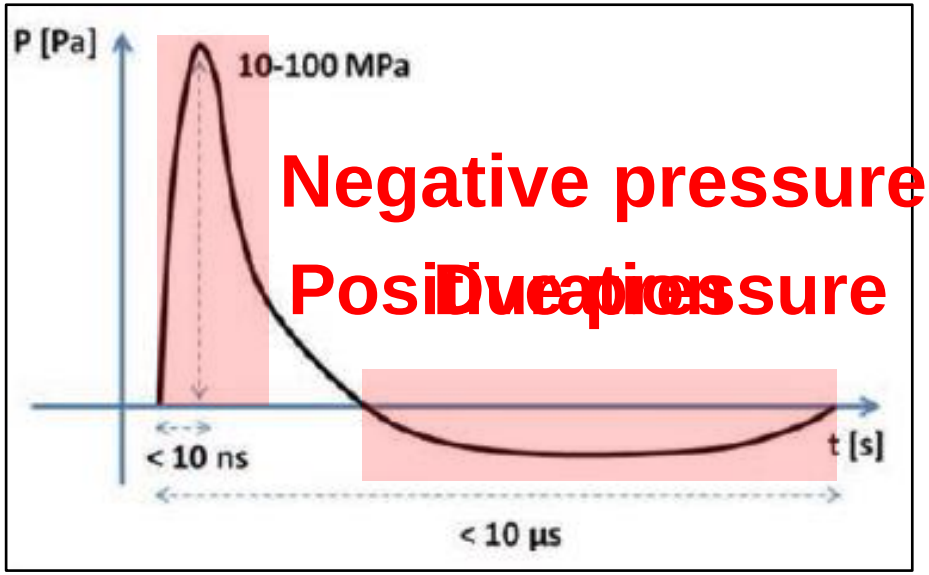
更好、易於操作的儀器，可能嗎？

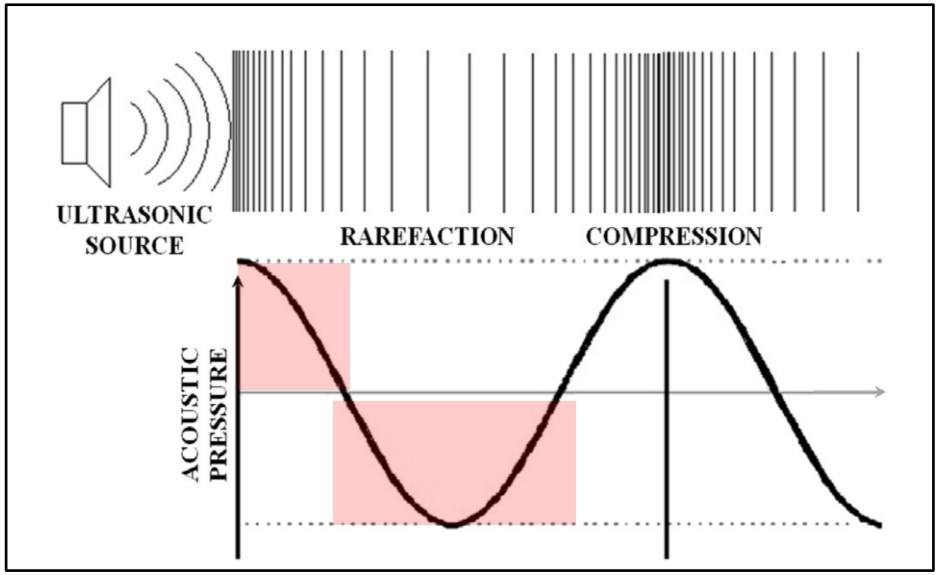
MRI-guided FUS device

Transducer

Commercial shockwave device

震波 vs. 超音波





Shockwave (SW)

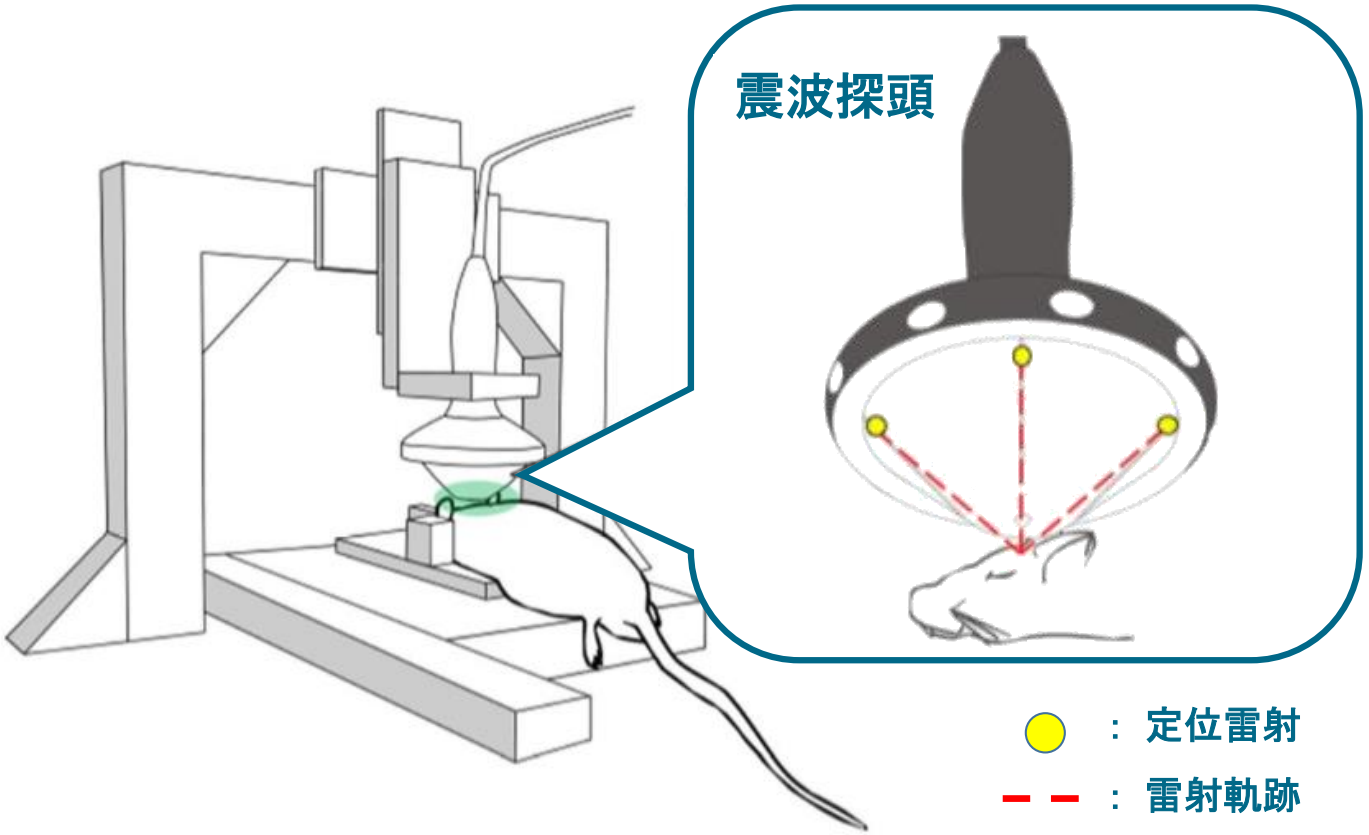
Range: 10 ~ 100 MPa

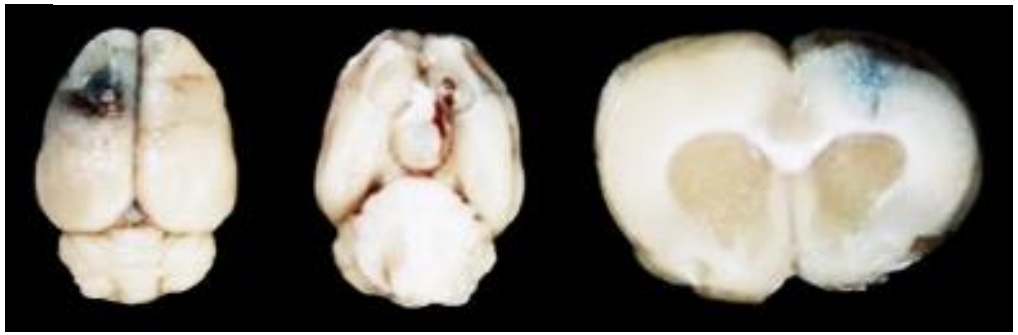
Ultrasound (US)

Range: 0.1 ~ 5 MPa

2014 extracorporeal shock wave therapy as an adjunct wound treatment: a systematic review of the Literature
2015 Mechanism of the sonochemical production of hydrogen

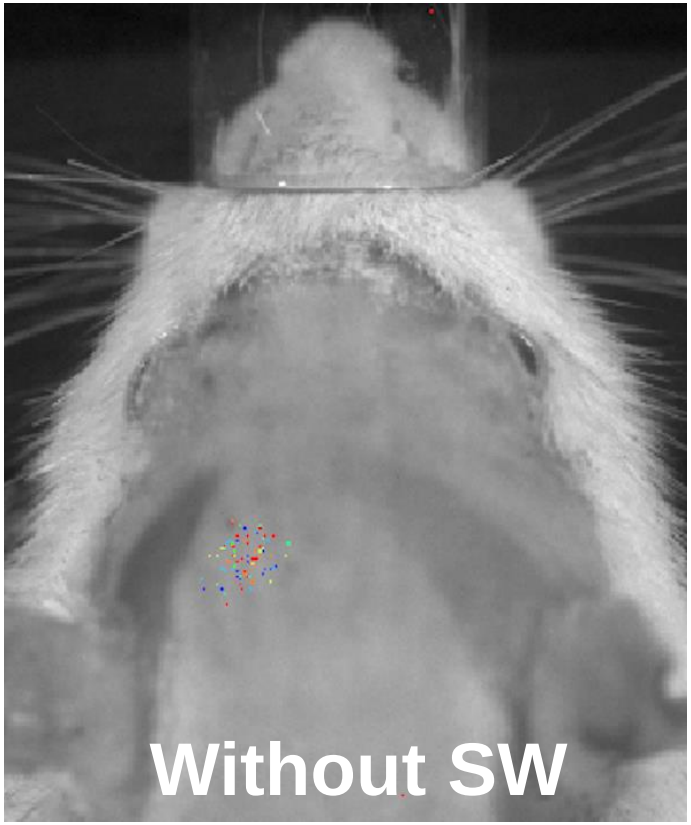
震波開啟血腦屏障

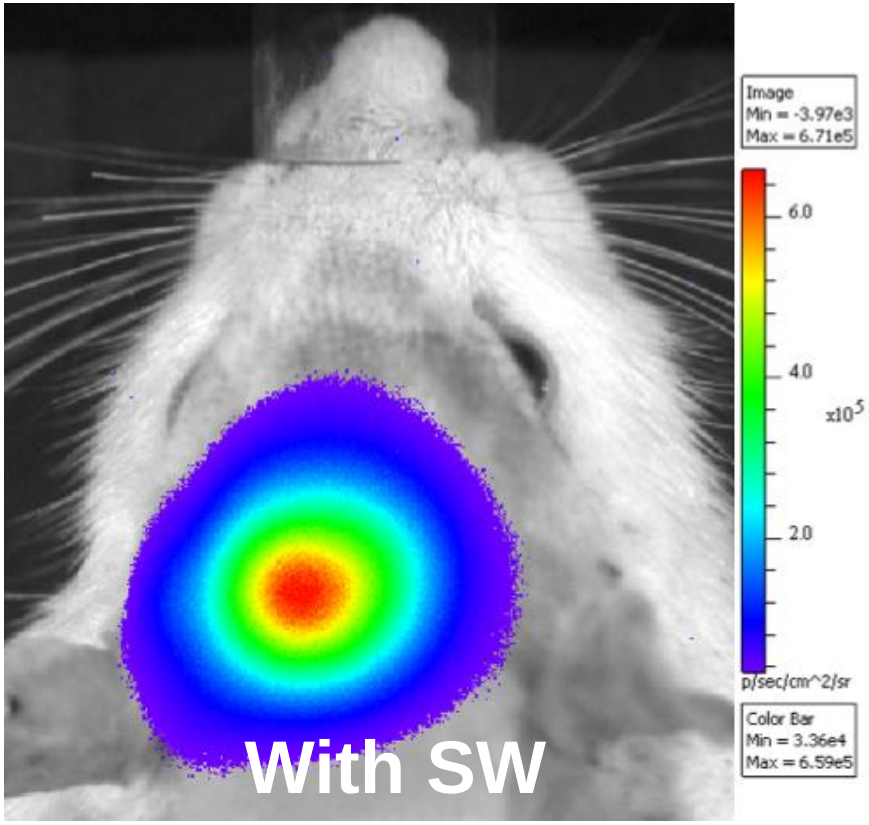




←血腦屏障開啟

震波觸發基因轉殖





***In vivo* optical imaging system**

龔 毅

Biomedical engineer (certificate).

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Research fellow. National University of Singapore.

National Taiwan University. Dept. BME. Ph.D.

National Taiwan University. College of Law.

National Chiao-Tung University. Institute of Technology Law.

CGPA 4.1 / 4.3.

Obtained 1st place of grade for semesters and awards frequently.

Obtained over 100 awards in total

(Include academic, art, music, literature, sport, and service fields).