Non-Invasive Selective Neural or Cellular Stimulation by Ultrasound
非侵入性超聲波腦或細胞刺激

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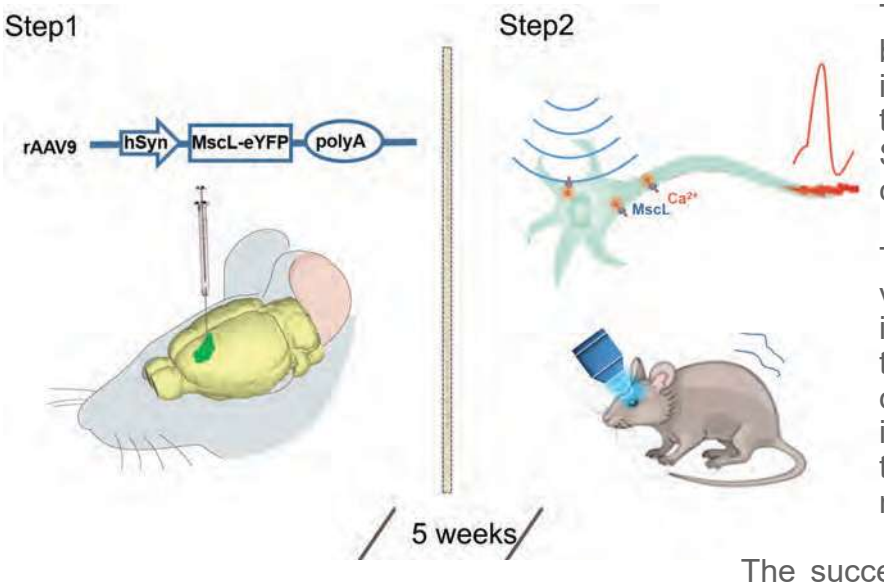
Special features 技術特點

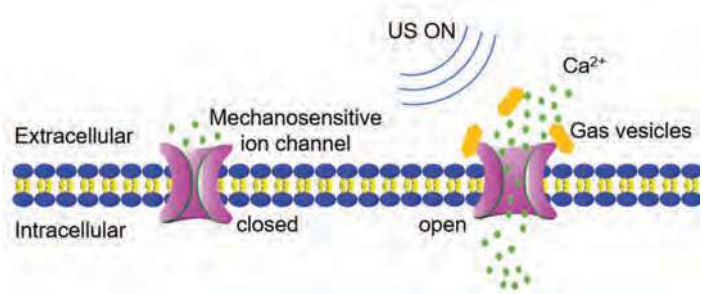
- *Neural type selective with high spatiotemporal resolution* 更精確
- *Better precision and safer* 更安全



The existing technology e.g. deep brain stimulation, optogenetics is invasive, while the noninvasive technology "Transcranial Magnetic Stimulation" lack spatial resolution and cell type selectivity.

This technology developed is a non-invasive method, which have significant impact both on fundamental brain function research and treating brain dysfunction.Using ultrasound in specific spatio-temporal regions, one is able to collect selectively manipulation of neuronal activity.

The success translation of this technology can result in significant impact on brain initiative projects and clinical needs.



醫學界在過去的數十年中不斷發明先進方法，從高侵入性深部腦刺激(DBS)，到微創經顱直流電刺激（tDCS）、經顱磁刺激（TMS）、化學遺傳學和光遺傳學等，以理解腦功能和治療腦疾病。然而以上技術缺乏時空分辨率和細胞類型選擇性。

理大團隊研發了一種用於超聲波腦刺激所選神經回路的非侵入性方法，通過完整頭骨非侵入性地進入深部腦結構，並且可通過可擴展性轉向在大腦範圍有毫米大小的焦點，可應用於以高空間和時間精度理解腦功能和治療腦疾病。

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