



UNSW
SYDNEY



Nerve Repair and Re-innervation via BaDGE® Naked DNA Therapeutics

Bionic array Directed Gene Electrotransfer (BaDGE®) is a platform technology for targeted delivery of naked DNA. The first clinical application uses DNA encoding neurotrophins to drive regrowth of the auditory nerve.

Competitive advantage

- First-in-class DNA electro-transfer technology for targeted DNA payload delivery to a broad range of tissue targets. It is:
 - Safe (naked DNA)
 - Regulatory permissive (non-viral)
 - Not limited by gene size packaging constraints
 - The highest level of control of the delivery of genes to target tissues
 - High efficiency gene augmentation therapeutics
- Multi-disciplinary team working at the interface of biology, engineering and clinical translation
- A patent portfolio covering all aspects of the BaDGE® platform

Impact

- BaDGE® is broadly transferrable to nerve/ brain injury and muscle re-innervation.
- Validated for nerve repair and directed nerve regrowth, CNS neuromodulation, control of muscle contraction
- Broad application potential based on this novel gene electrotransfer technology for discrete targeting of DNA therapeutics in tissues, brain injury, DNA vaccines, oncology, cardiovascular disease, hearing loss, and vision

Successful applications

- BaDGE® cochlear implant neurotrophin gene therapy clinical trial to regenerate the auditory nerve
- Licensing agreements with industry partners reflect due diligence on BaDGE® capabilities

Capabilities and facilities

- DNA therapeutics – models, including cell, tissue and behavioural models, focusing on translational neuroscience applications, including nerve injury, brain injury, hearing and vision, pain, stroke, and traumatic brain injury
- Biomedical Engineering Faculty allows application-specific modelling, design and DNA delivery probe production

Our partners

More Information

Scientia Professor Gary Housley

Translational Neuroscience Facility,
School of Medical Sciences

T: +61 2 9385 1057

E: g.housley@unsw.edu.au

Scientia Professor Nigel Lovell

Graduate School of Biomedical
Engineering

T: +61 2 9385 3922

E: n.lovell@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61(2) 9385 5008

- National and international medical device companies
- DNA Therapeutics Licensees