

# Short overview of EpimiRNA

MicroRNAs in the Pathogenesis, Treatment  
and Prevention of Epilepsy

David C Henshall, PhD

**EpimiRNA**  
MicroRNAs in the Pathogenesis, Treatment  
and Prevention of Epilepsy

- [dhenshall@rcsi.ie](mailto:dhenshall@rcsi.ie)

# Who is EpimiRNA?

# EpimiRNA

MicroRNAs in the Pathogenesis, Treatment and Prevention of Epilepsy



- 6 industry partners

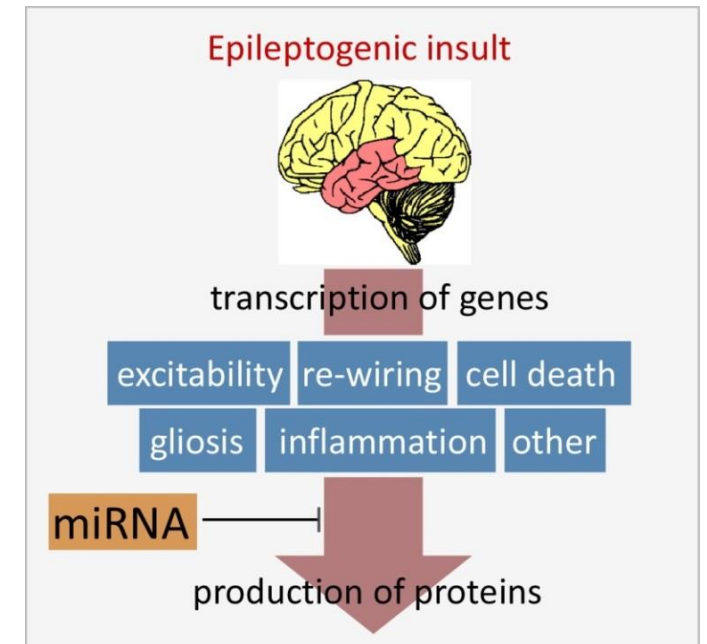
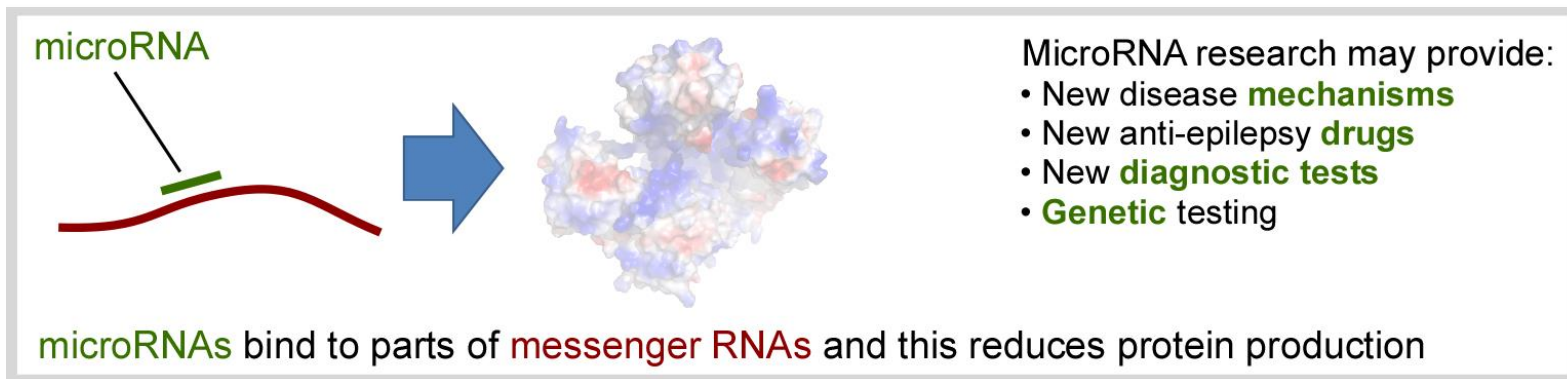
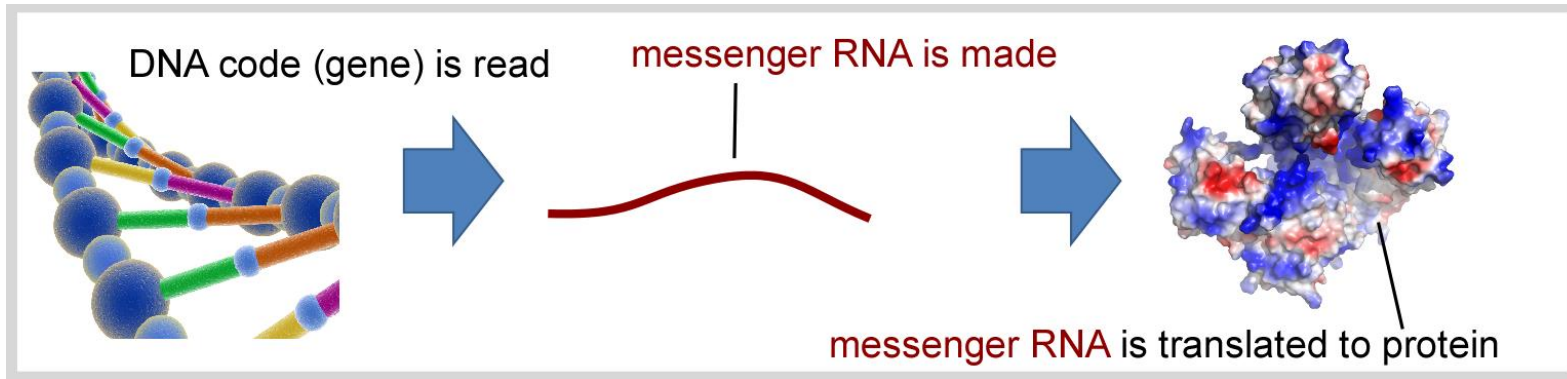


- 10 academic partners, + collaborators



# What are microRNAs? Why for epilepsy?

## Network molecules for a network disease



# What were the overall objectives?

EpimiRNA focuses on adult temporal lobe epilepsy

- Identify novel miRNAs and determine their target(s)
- Explore miRNAs as molecular biomarkers
- Determine the role of genetic variation in miRNAs
- Develop miRNA-based therapies for epilepsy

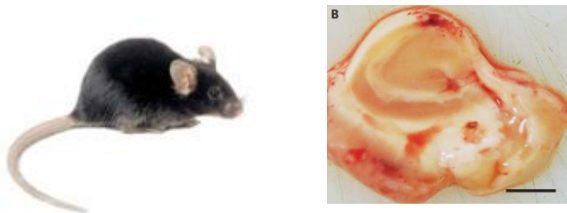




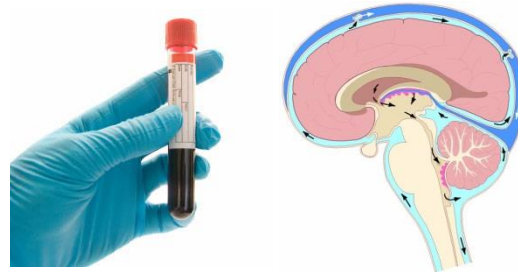
# Structure of the EpimiRNA project

## Nine experimental workpackages

- WP1,2,3 Discovery



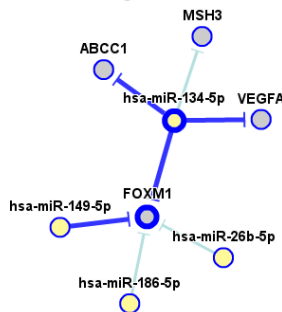
- WP1,2 Biomarkers



- WP5 Genetics



- WP4,6,7 Target/mechanism
- WP8,9 Therapeutics



# Results and impacts of EpimiRNA

- **Scientific progress**: discovery of multiple new miRNAs regulating seizures, their targets and mechanisms
- **Medical devices and therapies** in pre-clinical development
- **Publications** in leading journals – *Lancet Neurol*, *Cell Rep*, *EMBO*
- **Patent** and IP filing on new therapeutics and biomarkers
- **Community resources** - miRNA-target atlas, EpimiRBase, biobank
- **Funding leveraged** – industry, H2020, new research centres (CePTER; GER, FutureNeuro; IRE)