



medtech[®]
ACCELERATOR
A Health Enterprise East Joint Venture

Dr David Brooks

Ablatus Therapeutics (spin-out from Norfolk and Norwich University Hospital NHS Foundation Trust)

Award Amount: **£124,796**

Award Duration: **12 months**

Norfolk and Norwich University Hospitals 
NHS Foundation Trust

BIMODAL ELECTRIC TISSUE ABLATION (BETA)

Background

Radiofrequency Ablation (RFA) is an established technique for the treatment of solid tumours in situ. RFA uses Alternating Current (AC) to generate radiofrequency (RF) energy, which when delivered to target tissues via a probe, results in localised heating and tissue destruction. However, the heating effect desiccates tissues, increasing their impedance and decreasing their heat conductivity. This leads to charring and the phenomenon of 'roll-off' whereby the impedance of the tissue has increased to such an extent that no more RF energy can be deposited and the procedure comes to an end and as a result only relatively small lesions can be treated; as such RFA is ultimately self-limiting.

Technology

Bimodal Electric Tissue Ablation (BETA) is a novel tissue ablation system originated at the Norfolk and Norwich University Hospital. The BETA technology is currently being built for human clinical testing. BETA overcomes the limitations of RFA by including a DC element to complement the RF-generating AC. The application of DC to the ablation zone induces electroendosmosis in the target tissue which draws water from surrounding tissues to the ablation probe, thereby preventing tissue desiccation and the increase in impedance that leads to roll-off. The result is substantially greater ablation zones compared to standard RFA and the potential to treat previously untreatable tumours.

MTA support

Funding from the MTA award is supporting product development towards CE marking including: a documented design review, compliance assessment to ensure electrical safety of the device, further ex-vivo studies, as well as safety testing. The funding provided by the MTA in late 2017 allowed further investment to be secured from Innovate UK and local angel investment. The MTA project is due to complete its MTA award in late 2018.

Future work

The MTA award, alongside other funding leveraged as a result of the MTA's cornerstone investment, will help to deliver a clinic-ready BETA system to eventually be trialled at the Norfolk and Norwich University Hospital. This in-patient study will allow the necessary clinical data to be generated for CE marking and subsequent product market launch within the next couple of years. Further details: www.ablatus.co.uk

A Joint Venture Partnership

