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AIM: RENE

### **ReNeuron Group plc** ("ReNeuron" or the "Company")

### Positive pre-clinical data in nerve injury

### Positive pre-clinical data published using ReNeuron's CTX cells in artificial nerve tissue generated as part of a grant-funded collaboration

ReNeuron Group plc (AIM: RENE), a UK-based global leader in the development of cell-based therapeutics, is pleased to announce the publication of new positive data in a pre-clinical model of nerve injury which demonstrated comparable nerve regeneration compared to standard of care treatment and a stronger muscle function response.

The model, using ReNeuron's CTX cells as a component of artificial nerve tissue, was developed as part of a grant-funded collaboration with University College London and Sartorius Stedim Biotech. This is one of a number of early stage projects that ReNeuron is exploring through partnerships and grant funding.

The study, published today in *Scientific Reports* and funded by Innovate UK, shows a measurable recovery of motor and sensory function in severely damaged rat nerves repaired using the artificial tissue as a bridge between two severed nerve ends.

The newly developed living artificial nerve tissue (called Engineered Neural Tissue, EngNT-CTX) is made of ReNeuron's CTX clinical grade human neural stem cells aligned within a collagen hydrogel sheet. This living tissue is rolled into tubes that are used to bridge the gaps in nerves.

For the study, rats with sciatic nerve injuries were treated with either EngNT-CTX sheets delivered in collagen tubes, an autologous nerve graft (the current therapy used in hospitals today) or empty collagen tubes. After eight weeks, the treated nerves were assessed using a variety of methods to test their function and growth. EngNT-CTX constructs were comparable to autologous nerve grafts in supporting sufficient nerve regeneration to re-establish functional connections, and electrophysiological studies of muscle function gave a stronger response from nerves repaired with EngNT-CTX compared with the autologous nerve graft and the empty collagen tubes.

The published results open up the possibility of a new 'off the shelf', universal therapy to improve the treatment of peripheral nerve injuries by removing the

need for nerve grafts which cause additional damage and personalised stem cell therapies which take weeks to prepare.

ReNeuron's CTX cells are already being tested in clinical trials for the treatment of disability resulting from ischaemic stroke but this is the first time they have been combined with an engineered support to guide nerve repair, both *in vitro* and *in vivo*.

Once published, the paper will be available online here: www.nature.com/articles/s41598-018-20927-8.

# Dr James Phillips, lead study author, UCL Centre for Nerve Engineering and UCL School of Pharmacy, commented:

"Peripheral nerve damage can be severe and extremely debilitating, causing a loss of sensation or movement and the possibility of chronic pain. It is often as a result of trauma from road traffic accidents and frequently affects young people at huge personal cost. Currently, there are no engineered cellular therapies to treat nerve damage and where large gaps exist in damaged nerves, grafts are taken from a healthy part of the body to repair a more important function.

"We're impressed with how well the living artificial nerve tissue performed against the autologous nerve grafts. Although it is only in an animal model, it demonstrates that nerves can be repaired using engineered living constructs and opens up possibilities for future treatment options for repairing severe nerve damage."

## Professor Martin Birchall, Chair of Larynogology at the UCL Ear Institute and Consultant Head and Neck Surgeon, commented:

"Many patients undergoing nerve repair for trauma or after cancer surgery are not fully served by conventional repairs which may lead to slow and inaccurate regrowth. The development of a targeted, stem-cell based repair product, available to all surgeons, especially in the emergency setting, would represent a massive breakthrough in care."

### Dr John Sinden, Chief Scientific Officer of ReNeuron, commented:

"We are delighted to have shown the potential of ReNeuron's CTX cells in the area of nerve repair. The combination of ReNeuron's clinically validated CTX neural stem cells along with self-aligning collagen technology represents a step forward in developing a readily available cell-based treatment for nerve repair at reasonable cost."

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### About ReNeuron

ReNeuron is a leading, clinical-stage cell therapy development company. Based in the UK, its primary objective is the development of novel cell-based therapies targeting areas of significant unmet or poorly met medical need.

ReNeuron has used its unique stem cell technologies to develop cell-based therapies for significant disease conditions where the cells can be readily administered "off-the-shelf" to any eligible patient without the need for additional immunosuppressive drug treatments. The Company has therapeutic candidates in clinical development for disability as a result of stroke, for critical limb ischaemia and for the blindness-causing disease, retinitis pigmentosa.

ReNeuron is also advancing its proprietary exosome technology platform as a potential new nanomedicine targeting cancer and as a potential delivery system for drugs that would otherwise be unable to reach their site of action.

ReNeuron's shares are traded on the London AIM market under the symbol RENE.L. Further information on ReNeuron and its products can be found at <u>www.reneuron.com</u>.