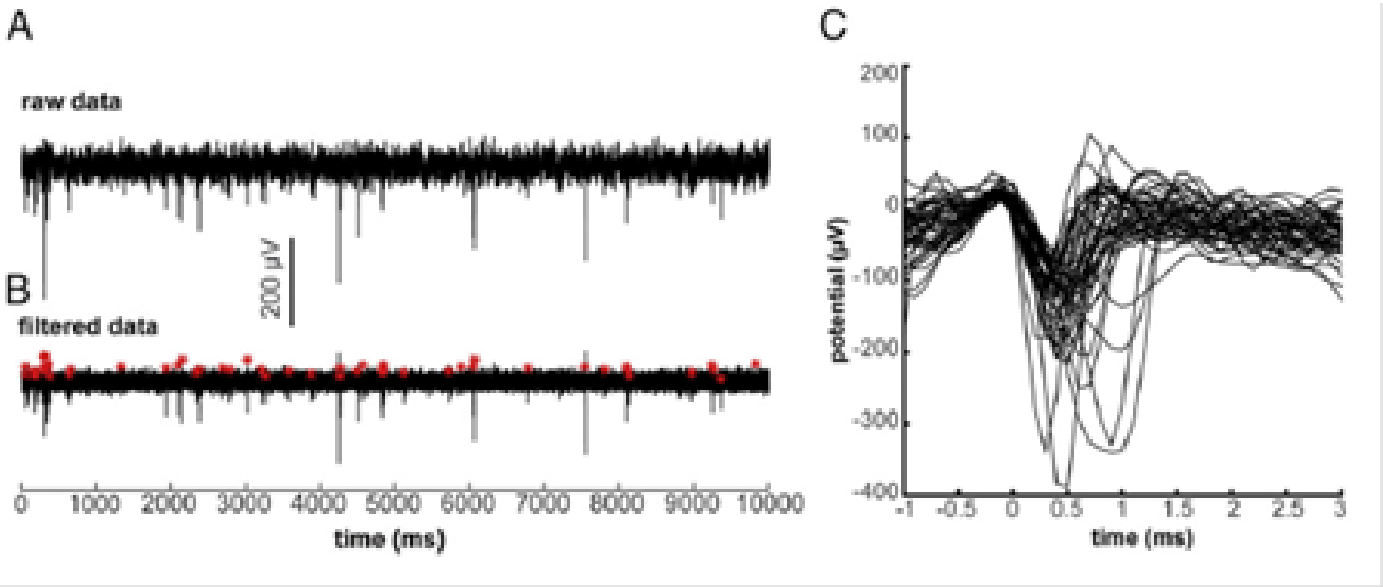
Proof of Concept: Functional neurons and neuronal networks

Jakobsson, A. et al. Three-dimensional functional human neuronal networks in uncompressed low-density electrospun fiber scaffolds. Nanomedicine: Nanotechnology, Biology and Medicine 13, 1563–1573 (2017) doi: 10.1016/j.nano.2016.12.023.

The detection of neuronal pre- and post-synaptic inhibitory and excitatory marker expression indicated maturation into functional neurons and neuronal networks. Therefore, we investigated the electrophysiological properties of the human neurons in the 3D scaffolds by using single channel extracellular probes inserted into the fiber networks.



Extracellular electrophysiological measurements of human neurons in the 3D scaffold revealed multiple forms of electrical activity. A) Electrical activity recorded on uncompressed fiber scaffold. (B) Electrical activity after noise removal, bandpass filtering and spike detection (red markings). (C) Detected action potentials plotted against their amplitude and time course. Several action potential modulus are clearly seen. (Jakobsson 2017)

For more information, please contact:

Cellevate ; info@celevate.com

Iwai North America Inc (US distributor) : info@iwai-chem.com