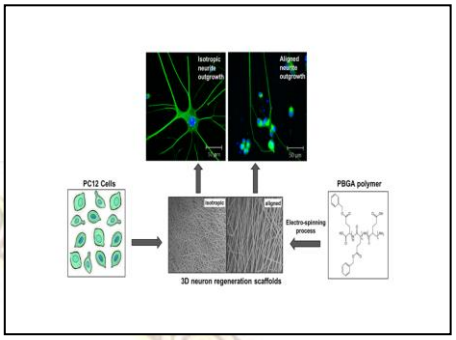
合成與製作含神經刺激元的肽高分子用於神經再生的 3D 支架



提案人： 林唯芳 教授

單　位： 國立臺灣大學　材料學系/研究所

簡　歷： 林唯芳教授專精於高分子材料及奈米材料，她為美國麻州大學的博士，在美國西北大學做過博士後研究，爾後加入美國西屋研發中心從事新穎材料的研發，16 年獲得 6 項傑出研究獎包含電子、電機用的高效能材料。於 1996 年至台灣大學任教為特聘教授，她主要的研究為材料設計、合成及加工於電子及生醫的應用。她獲得二次科技部傑出研究獎(2016 及 2011)，獲得高分子學會傑出研究學者獎(2015)。她目前發表 200 篇 SCI 論文，2 本英文教科書(高分子及太陽能電池專書)，獲 28 項美國專利、34 項台灣專利。

市場及需求:

中樞神經包括視神經損傷的病患全球超過六千萬，目前仍沒有有效的治療法，本發明有促進神經再生，使得神經病患者如青光眼者、老人癡呆、Parkinson 及 Huntington 患者，得以醫治。

技術摘要(含成果):

本發明揭露一種新穎的肽高分子的設計、合成及其應用。此肽高分子含有神經刺激元、谷胺酸酯，以開環聚合而得。以電紡織製程，製作 3D 的支架，可以使神經細胞快速成長為神經突軸，長達近毫米尺寸，可為神經再生應用。

優勢:

本發明為原創沒有已知的發明，所發明的材料可以以傳統藥品的合成技術量產，價格低廉，使用普及。

競爭產品:無

專利現況:

專利申請中

聯絡方式(請不用填):

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Synthesis and Fabrication of Neuron Containing Polypeptide for neuron regeneration 3D scaffolds

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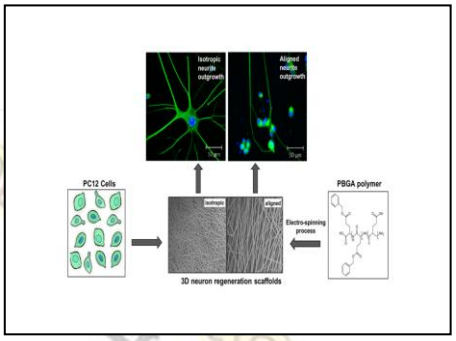

Experience:

Professor Su is specialized in polymeric materials and nanomaterials. She obtained her Ph.D. from University of Massachusetts (Amherst, MA, USA) and did postdoctoral research in Northwestern University (Evanston, IL, USA). She joined Westinghouse Research Center (Pittsburgh, PA, USA) to develop materials for electric/electronic applications for 16 years with 6 outstanding researcher awards. At present, she is a distinguished professor in National Taiwan University. Her research is focused on the design, synthesis and processing of polymeric materials and nanomaterials for medical applications and electronic device/solar applications. She was awarded 2015 Distinguished Researcher of the Polymer Society of Taipei, 2016 and 2011 Outstanding Researcher of Ministry of Science and Technology of Taiwan. She has published 200 SCI papers, 2 text books for polymer (2013 Springer) and solar cell (2012 Wiley) respectively, 28 US patents and 34 Taiwan patents.

Market Needs:

Neural tissue engineering has become a potential technology to restore the functionality of damaged neural tissue with the hope to cure the patients with neural disorder and to improve their quality of life. The neural tissue dysfunction has been observed in millions of people who suffer from stroke, traumatic injury of brain, eye, spinal cord and neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease and Huntington's disease.

Our Technology:

This invention describes the design, synthesis and fabrication of neuron cue containing polypeptides for 3D neuron regeneration scaffolds. The idea has been realized by design and synthesis of polypeptides containing neuron stimulate, glutamic acid, for the fabrication of biomimetic 3D scaffold in neural tissue engineering application.

Strength:

Can be produce in large quantity and purity, low cost, neuron growth specificity, biocompatible and biodegradable.

Competing Products: none

Intellectual Properties:

patent pending