【校級神經醫學研究中心 110 年 10 月份月會】

會議紀錄

時　　間：110年10月13日(星期三) 12:10-13:30

地　　點：視訊會議-Google Meet

主　　席：蔣永孝 主任(藍亭 副主任代理)

TMU Neuroscience Research Center Monthly Meeting Record for October, 2021

Chair: Vice Director Timothy Lane

Recorded by: Professor J. Y. Wang, Secretary C. N. Huang

Host: The Retinopathy Team

Time: 2021/10/13 (Wednesday) 12:10-13:30

Place: Net meeting via Google Meet

Meeting Agenda (議程) :

1. Opening by Vice Director Timothy Lane 藍亭副主任
2. "The Therapeutic Role of Transforming Growth Factor-β-Activated Kinase 1 (TAK1) in Ocular Angiogenesis" presented by Dr. Fan-Li Lin 林凡立博士

1. Opening

In the opening, Vice Director Timothy Lane welcomed the Retinopathy Team and the leader of the Retinopathy Team, Prof. Yu-Wen Cheng (鄭幼文教授). Then Prof. Cheng introduced the speaker, Dr. Fan-Li Lin (林凡立博士). Dr. Lin finished his bachelor, master and Ph.D. degrees at TMU, and after one year being a post-doctor in Prof. George Hsiao's (蕭哲志教授) lab, he went to Australia and continued his research at the University of Tasmania for two years. Dr. Lin obtained a chance to work in Shenzhen Institute of Advanced Technology (中國科學院深圳先進技術研究院) in China. The topic was to investigate the potential application of the biomaterial in cancer diagnosis and therapeutic strategy in retina disease. In these few years, he published some high-impact factor papers. After he finished his international post-doctor journey in Australia and China, he came back to Taiwan and which can contribute to his academic research ability in TMU. So now he is one of the members of the retinopathy group. Today he would introduce his research about transforming growth factor-β-activated kinase 1.

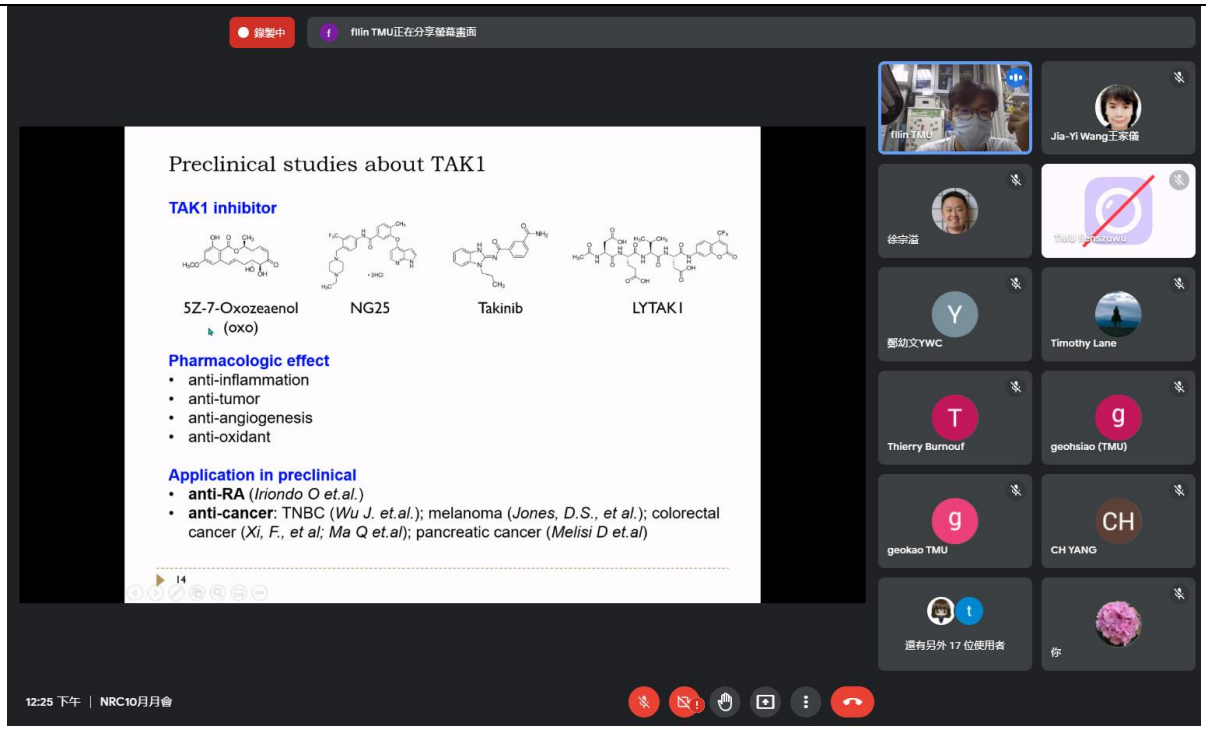
藍亭副院長首先歡迎視網膜團隊並由視網膜病變團隊召集人鄭幼文教授介紹講者-林凡立博士。林博士在台北醫學大學完成學士、碩士及博士學位，並在蕭哲志教授實驗室進行一年的博士後研究後，前往澳洲塔斯馬尼亞大學繼續進行研究兩年。之後到中國科學院深圳先進技術研究院，研究生物材料在視網膜疾病的癌症診斷和治療策略中的潛在應用。近幾年林博士也發表數篇高點值論文，今天他將介紹關於 transforming growth factor-β-activated kinase 1 的研究。

2. Forum hosted by the Retinopathy Team

1) The Therapeutic Role of Transforming growth factor-β-activated kinase 1 (TAK1) in Ocular Angiogenesis presented by Dr. Fan-Li Lin 林凡立博士

Brief summary of Dr. Lin's speech:

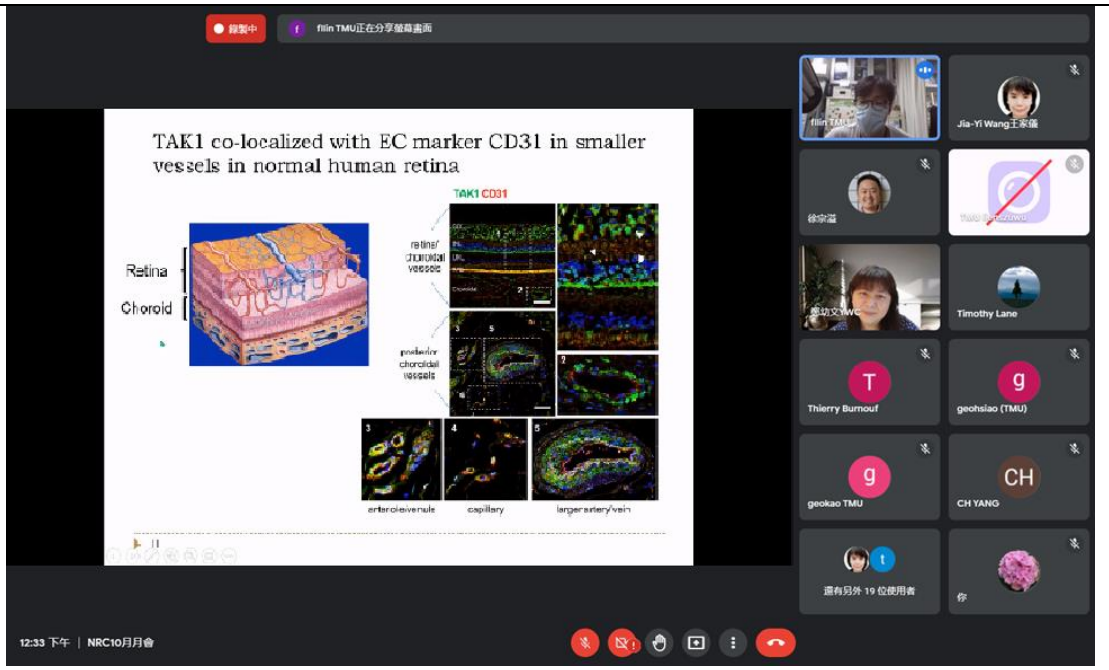
Neovascularization (NV) is a severe complication within various types of ocular diseases. Retinal neovascularization or pathological angiogenesis in the cornea could cause the severe visual impairment. Transforming growth factor-β-activated kinase 1 (TAK1), a mitogen-activated protein kinase kinase kinase (MAPKKK), plays a critical role in inflammation, innate immune responses, apoptosis, and physiological angiogenesis. Its role in pathological angiogenesis, particularly in ocular, remains unclear. This study revealed an increment of TAK1-mediated signaling pathways in rat retina with pathologic NV and retina from proliferative diabetic retinopathy. Selective inhibition of TAK1 activation by 5Z-7-oxozeaenol attenuated aberrant angiogenesis in retina and cornea. Transcriptome profiling revealed that TAK1 activation in human microvascular endothelial cells under TNFα stimulation led to increasing the gene expression related to cytokines and microglial activation, mainly through nuclear factor kappa B (NFκB) signaling pathway. Our data suggest that inhibition of TAK1 signaling may have therapeutic potential for the treatment of neovascular pathologies in ocular NV diseases.

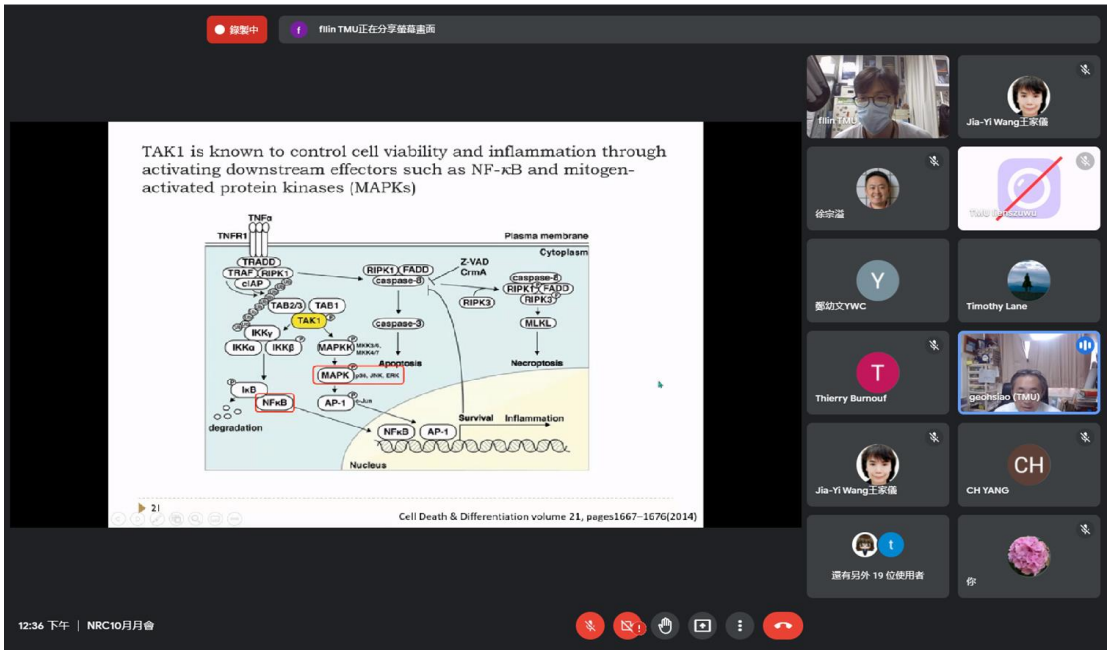


The therapeutic role of transforming growth factor- β -activated kinase 1 (TAK1) in ocular angiogenesis presented by Dr. Fan-Li Lin (Oct 13th, 2021).

2) Discussion

Prof. Cheng asked if the TAK 1 inhibitors were used in the clinical trial. Dr. Lin said that they are still in the pre-clinical stage and some reports showed that the inhibitor might have psycho toxin effects. Therefore, it's a critical question that they should solve before applying clinically. Prof. Cheng also suggested that Dr. Lin can compared the potency of the TAK1 inhibitor with the marketing drugs in the future. Prof. Hsiao discussed that TAG1 is involved in the neurogenesis pathway so maybe the TAG1 inhibitions could interfere with some neural function with Dr. Lin. Dr. Lin also said that TAK1 inhibition indeed provide a more harmful effect for neural cells.





Prof. Cheng and Prof. Hsiao discussed with Dr. Fan-Li Lin (Oct 13th, 2021)

會議結束時間為 12:40。