

# 治療與診斷漸凍人及TDP-43蛋白相關神經退化性疾病的單株抗體TDP-O

## 主要領域 神經退化性疾病治療

### 產品/技術簡介

- 在一些嚴重的神經退化性疾病患者中，發現TDP-43形成的蛋白質病變，包括約95%肌萎縮性脊髓側索硬化症(俗稱漸凍人ALS)、50%額顳葉失智症(FTD)、和30-60%阿茲海默症(AD)。TDP-O 是一支能夠選擇性辨認錯誤摺疊TDP-43寡聚體構型的專一性抗體，能夠對抗肌萎縮性脊髓側索硬化症和TDP-43蛋白質病變等相關疾病。

### 應用

- 治療與診斷肌萎縮性脊髓側索硬化症。
- 治療含有TDP-43蛋白質病變的額顳葉失智症和阿茲海默症。

### 優勢

- 唯一針對錯誤摺疊TDP-43的專一性抗體。其他競爭公司所生產的TDP-43抗體會辨識正常的TDP-43蛋白，有可能會影響TDP-43蛋白的正常生理功能，而造成副作用。

### 專利現況

- US 9796778 (2017-2035, 上位專利)
- TW I592423 (2017-2035)



**TDP-O**  
抗體藥物

錯誤折疊  
TDP-43  
低聚物

- 腦神經細胞及脊髓運動神經元數量↑
- 運動行為↑
- 錯誤折疊 TDP-43清除↑
- TDP-43誘發的神經毒性↓
- TDP-43誘發的發炎反應↓

# TDP-O Monoclonal Antibody for the Treatment and Diagnosis of ALS and Neurodegenerative Diseases Associated with TDP-43 Protein

## Research Area Neurodegenerative Disease Treatment

### ▪ Technical statement

- TDP-43 proteinopathies were found in several severe neurodegenerative diseases including around 95% of amyotrophic lateral sclerosis (ALS), 50% of frontotemporal dementia (FTD), and 30-60% of Alzheimer's disease (AD) patients. TDP-O antibody is a conformation-specific antibody for misfolded TDP-43 oligomers to combat ALS and TDP-43 proteinopathies.

### ▪ Applications

- Treatment and diagnosis of ALS.
- Treatment of FTD and AD with TDP-43 proteinopathies.

### ▪ Advantages

- TDP-O is the only specific antibody against misfolded TDP-43. TDP-43 antibodies produced by other competing companies can recognize normal TDP-43 protein, which may affect the normal physiological function of TDP-43 protein and cause side effects.

### ▪ Patent status

- US 9796778 (2017-2035, served as upper patent for the product)
- TW I592423 (2017-2035)



### Therapeutic Antibody



**misfolded  
TDP-43  
oligomers**

- motor neurons in the spinal cord ↑
- motor behaviors ↑
- misfolded TDP-43 clearance ↑
- TDP-43-induced neuronal toxicity ↓
- TDP-43-induced inflammation ↓

計畫主持人 Project PI

陳韻如研究員



計畫成員 Member



章微微博士



吳任容博士  
候選人



黃詩涵



• **Website:**

<https://www.genomics.sinica.edu.tw/index.php/tw/chen-yun-ru-ruby->

• **Contact person:** 陳韻如研究員

• **TEL:** +886-2-27871275

• **Email:** yrchen@gate.sinica.edu.tw