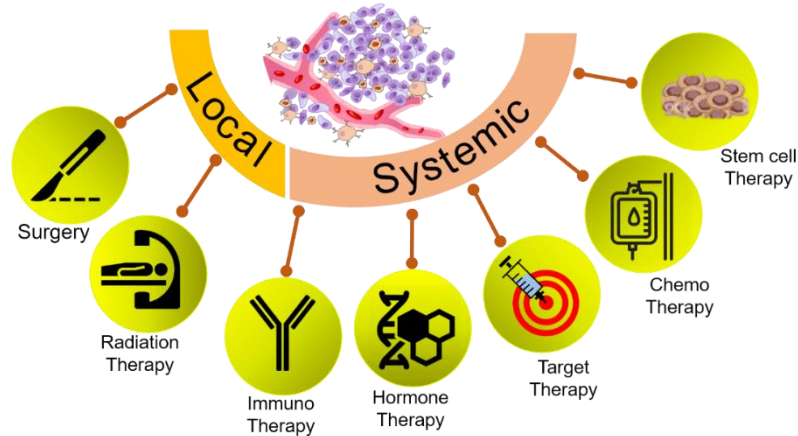




# **DBPR168: A neuroprotective drug against chemotherapy- induced peripheral neuropathy**

**Institute of Biotechnology and Pharmaceutical Research  
National Health Research Institutes, Taiwan  
2023**

# Chemotherapy-induced peripheral neuropathy (CIPN)



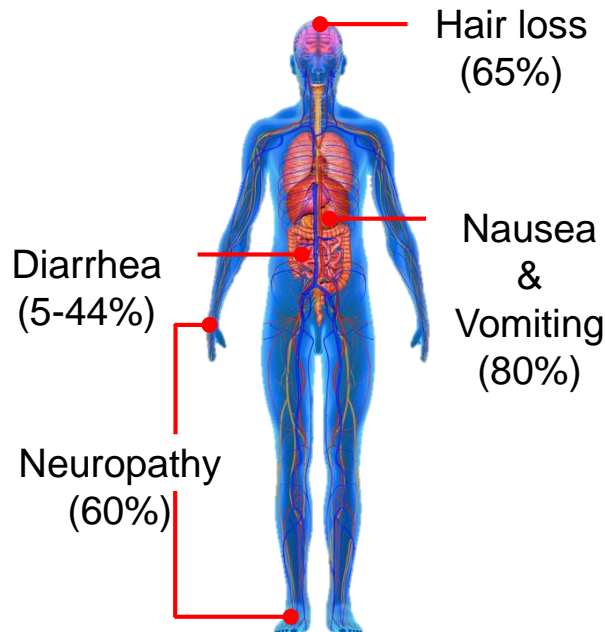
Tingling



Numbness



Burning



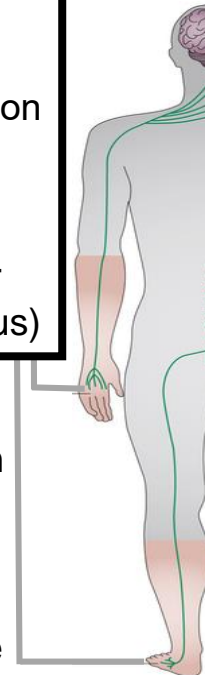
**Clinical symptoms:**

- Numbness
- “Pins-and-needles” sensation
- Thermal algesia
- Allodynia (pain sensation as a result of normally non-noxious mechanical stimulus)

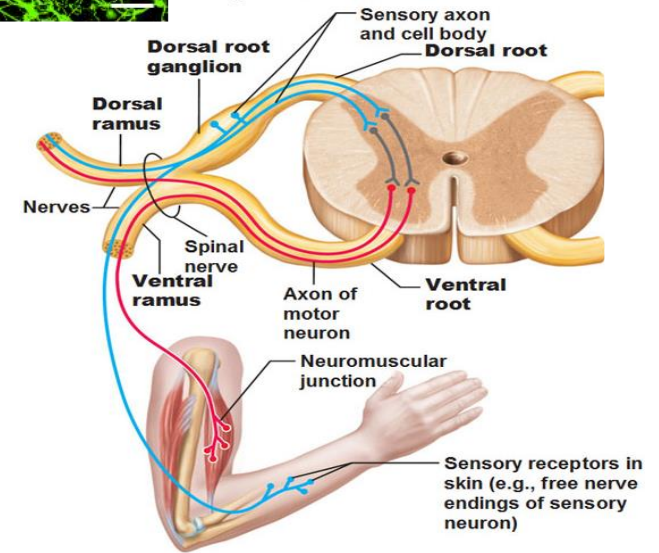
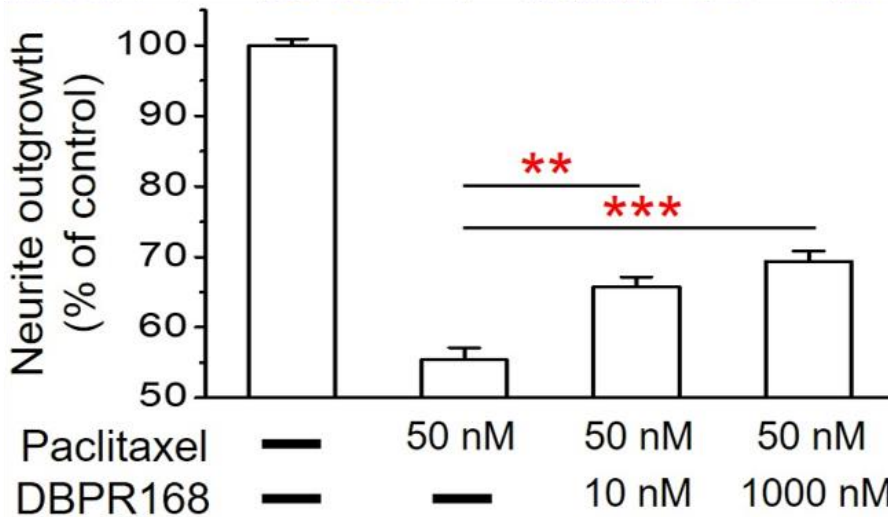
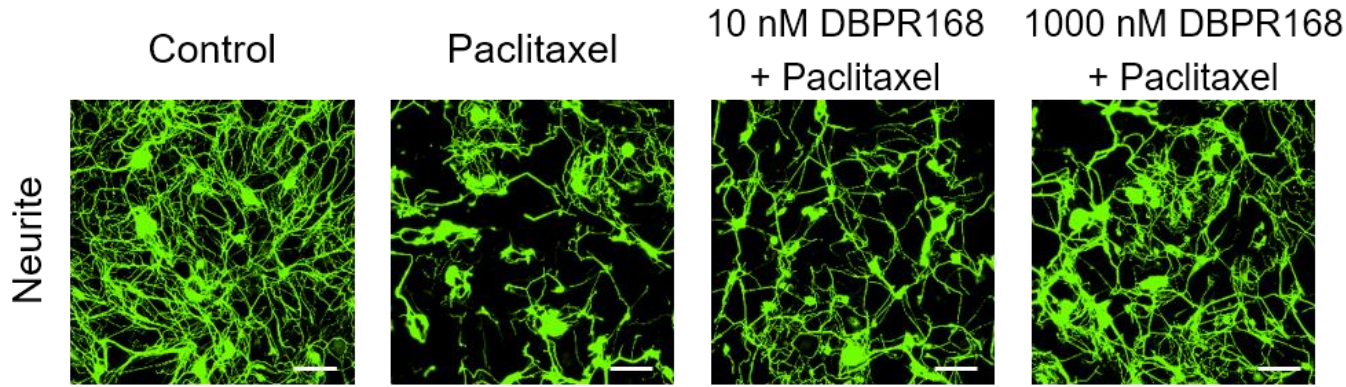


High prevalence of CIPN in cancer survivors and patients:

- Jeopardize quality of life
- Cessation of treatment



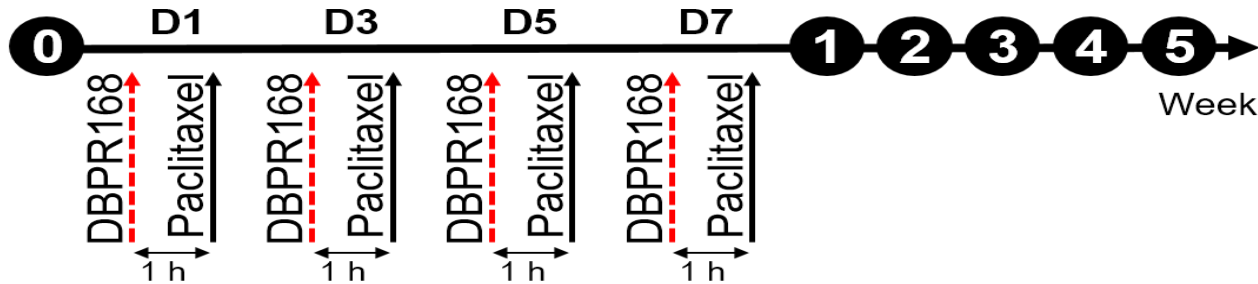
# DBPR168 displayed protective effect against paclitaxel-induced neurotoxicity



\*\*p < 0.01; \*\*\*p < 0.001 by two-tailed Student's t-test.

# DBPR168 ameliorates paclitaxel-induced peripheral neuropathy in vivo

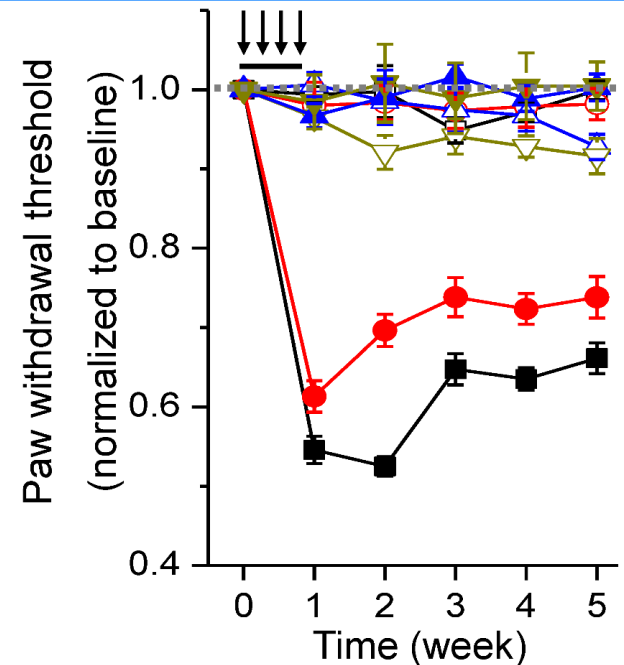
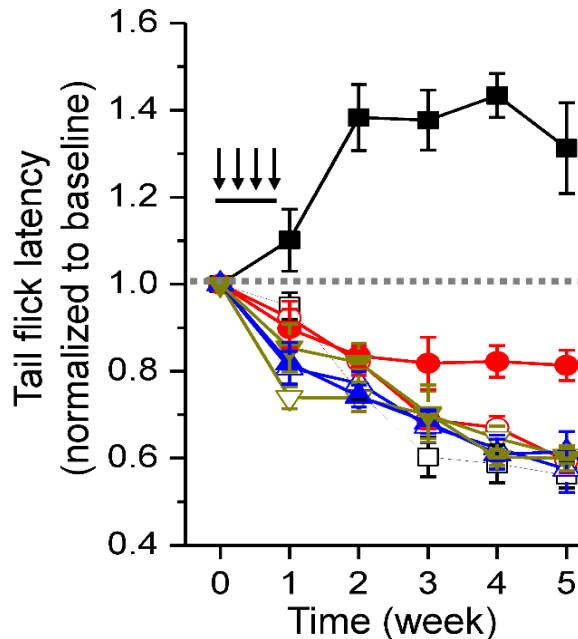
Strategy:



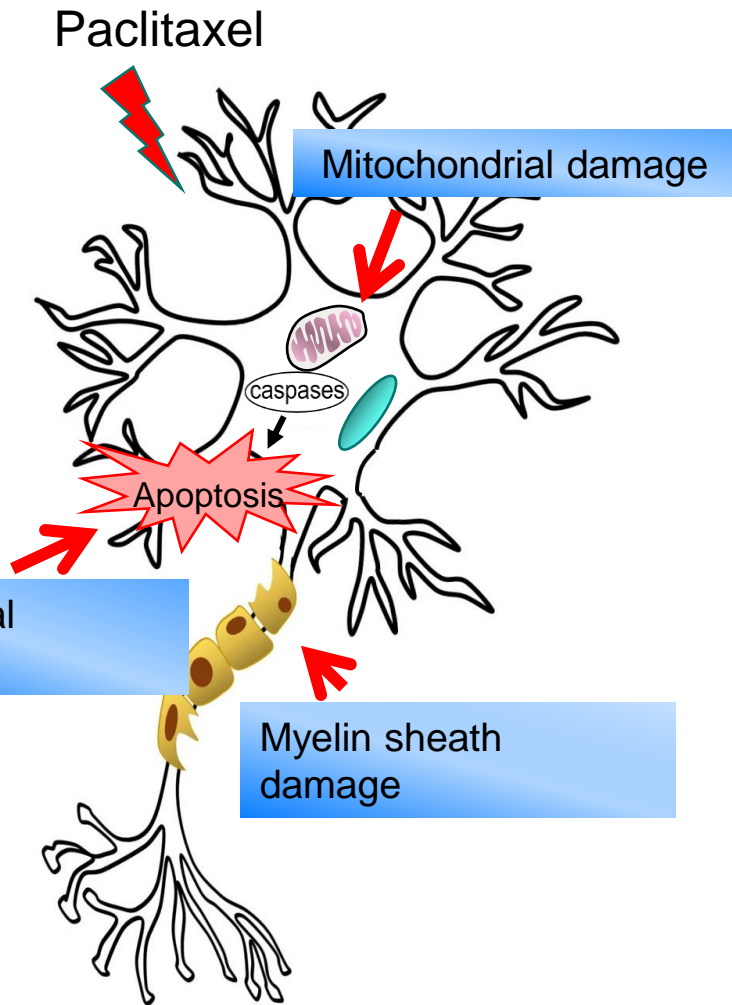
Tail immersion: **Thermal allodynia**

von Frey filament: **Mechanical allodynia**

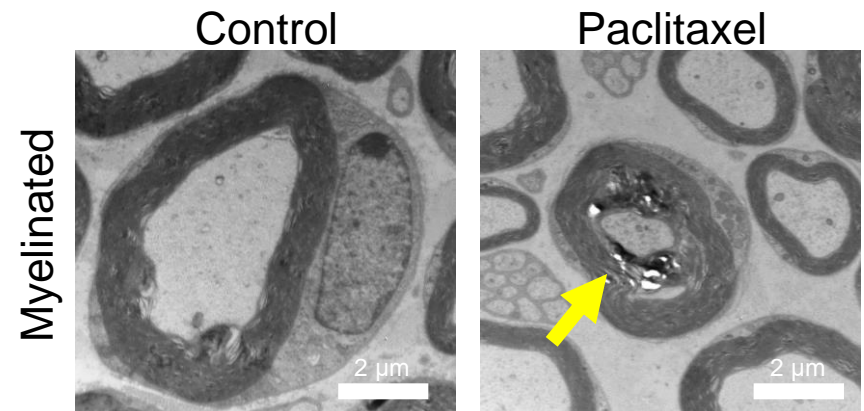
- Saline / Saline
- DBPR 168 (5) / Saline
- △ DBPR 168 (10) / Saline
- ▽ DBPR 168 (20) / Saline
- Saline / Paclitaxel (4.5)
- DBPR 168 (5) / Paclitaxel (4.5)
- ▲ DBPR 168 (10) / Paclitaxel (4.5)
- ▼ DBPR 168 (20) / Paclitaxel (4.5)



# Paclitaxel induces small-diameter nerve fiber damage

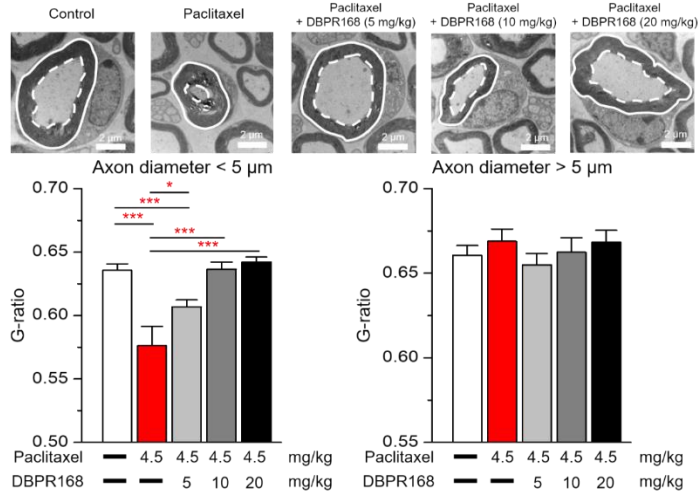


Type	Information carried	Myelin Sheath?	Diameter (μm)
A-α	Proprioception, motor	myelinated	13-20
A-β	Touch, pressure	myelinated	6-12
A-δ	pain (mechanical and thermal)	myelinated	1-5
C	pain (mechanical, thermal and chemical)	non-myelinated	0.2-1.5

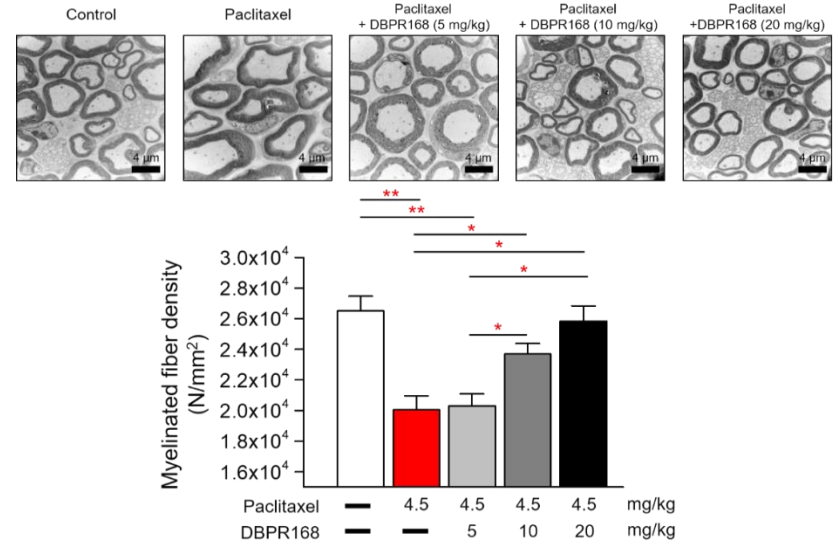


# DBPR168 displays neuroprotection on paclitaxel-induced sciatic nerve injury

**A**



**B**



\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001 by two-tailed Student's t-test.

**C**

