



# DBPR168: a potential neuroprotective drug against chemotherapy-induced peripheral neuropathy

## INDICATIONS:

- ✓ chemotherapy-induced peripheral neuropathy

## DEVELOPMENT STATUS:

Candidate Identification

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## INVENTION DESCRIPTION

Chemotherapy-induced neurotoxicity is a common adverse effect of cancer treatment. No medication has been shown to be effective in the prevention or treatment of chemotherapy induced neurotoxicity. Paclitaxel is a first-line taxane-based chemotherapeutic agent treated for various malignancies such as breast, ovarian, and non-small cell lung cancers. Unfortunately, approximately 60-70% patients develop peripheral neuropathy after receiving paclitaxel, which not only diminishes quality of life but even makes patients quit therapy. Therefore, it is an urgent medical need to develop effective neuroprotective drugs against CIPN. DBPR168 has completed the proof-of-principle in two behavioral mouse models of paclitaxel-induced neuropathy (i.e. a tail immersion and von Frey filament test). Namely, pretreatment with DBPR168 was able to alleviate both paclitaxel-induced thermal hypesthesia and mechanical allodynia significantly. Other salient profiles of DBPR168 included a high safety dose (MTD > 500 mg/kg, mice), and a large therapeutic window (MTD/MED > 50, mice) in non-GLP toxicology studies. DBPR168 might have great potential to become a first-in-class neuroprotective agent to prevent/alleviate chemotherapy-induced peripheral neuropathy (CIPN).

## COMPETITIVE ADVANTAGES OF DBPR168

- No FDA-approved medication has been claimed to effectively treat cancer patients suffering from CIPN.
- A novel compound DBPR168 of this patent exhibits neuroprotective capacity against CIPN as demonstrated by the significant recovery of thermal dysesthesia and mechanical hypersensitivity in neuropathy mouse models.
- Mechanistically, DBPR168 appears to effectively inhibit paclitaxel-induced inflammatory responses and the infiltration of immune cells into sensory neurons.

## MARKET POSITIONING/OPPORTUNITY

DBPR168 will be used in cancer patients who develop peripheral neuropathy after receiving chemotherapy. The global paclitaxel injection market is primarily driven by the surging prevalence of cancer across the globe and is predicted to be valued from US\$ 4.51 billion in 2021 up to US\$ 11.16 billion by 2030. The market potential of DBPR168 is expected to grow increasingly with the size of the paclitaxel market.