

Technology/ Title	Neuroprotective Agent DBPR168 against Chemotherapy-Induced Peripheral Neuropathy	
Technology Type	<input type="checkbox"/> Biotechnology	<input type="checkbox"/> Device/Diagnostics
	<input checked="" type="checkbox"/> Pharmaceutical	<input type="checkbox"/> Others: _____ -
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Technology Description	<p>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 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/suspend therapy. Therefore, it is an urgent medical need to develop effective neuroprotective drugs against chemotherapy-induced peripheral neuropathy (CIPN). DBPR168 has completed the proof-of-principle in two behavioral mouse models of paclitaxel-induced peripheral neuropathy (i.e. a tail immersion and von Frey filament test). Pretreatment with DBPR168 was able to significantly alleviate both paclitaxel-induced thermal hypesthesia and mechanical allodynia. Mechanistically, DBPR168 appears to effectively inhibit paclitaxel-induced inflammatory responses and the infiltration of immune cells into sensory neurons. More importantly, DBPR168 exhibits a high safety dose (MTD > 500 mg/kg, IV, mice) and a low minimum efficacy dose (10 mg/kg), thus resulting in a large therapeutic window (MTD/MED > 50, mice). DBPR168 may have great potential to become a first-in-class neuroprotective agent to prevent chemotherapy-induced peripheral neuropathy.</p>	
Intellectual Property	<p>Patent Title: Pyrimidine compounds and use thereof Filed on 2022/7/29 US (application No. 17/877,163); ROC (application No. 111128548); PCT (application No. PCT/US2022/38878)</p>	
Key Publications	<p>Discovery of Potential Neuroprotective Agents against Paclitaxel-Induced Peripheral Neuropathy. <i>J Med Chem.</i>, 2022, <i>65</i>, 4767–4782.</p>	
Business Opportunity	<p>DBPR168 will be used in cancer patients who develop peripheral neuropathy after receiving paclitaxel. The global paclitaxel injection</p>	

	<p>market is primarily driven by the surging prevalence of cancer across the globe. According to Precedence Research, the global paclitaxel injection market size is predicted to be worth around US\$ 11.16 billion by 2030 from valued at US\$ 4.51 billion in 2021, growing at a CAGR (compound annual growth rate) of 12.5% from 2022 to 2030. The market potential of DBPR168 will grow in tandem with the size of the paclitaxel market.</p>
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