

Nonclinical Safety and Efficacy Validation of a Novel Photosensitizer (MPP100) for the Treatment of Cervical Dysplasia and Approval of an Investigational New Drug (IND) Application

Dr. inB Inc.



ONCOLOGY

Preclinical

Product Type	Small molecules
Indication	Cervical intraepithelial neoplasia (CIN1-3) & HPV infection
Target	HPV-infected dysplastic and hyper-proliferative squamous cells within CIN lesions. Overexpressed LDL receptors and Mitochondria of abnormal cells.
MoA(Mechanism of Action)	[PDT(Photodynamic Therapy) mechanism] ① Topical application & Selective accumulation - MPP100(Photosensitizer, Code Name) is applied topically and selectively accumulates in CIN lesions by binding to overexpressed LDL receptors on dysplastic cells. ② 660nm laser irradiation (Photo-activation) - Specific 660nm laser light activates the MPP100, generating high-yield ROS(Reactive Oxygen Species) only within the targeted lesion area. ③ Targeted destruction & Systemic immunity - ROS induces direct oxidative destruction(Apoptosis/Necrosis) of lesions. - Triggers a systemic immune response(Abscopal effect) by releasing tumor antigens.
Competitiveness	1) Non-invasive treatment of cervical diseases - Eliminates the need for surgical excision(e.g., LEEP, Conization), preventing premature birth risks and preserving cervical function for women of childbearing age. 2) Enhanced penetration 660nm wavelength penetrates up to ~5mm(vs. ~2mm of conventional 630nm), effectively treating deep CIN lesions. 3) High efficacy & Convenience ~7x higher molar extinction coefficient allows highly effective treatment than competitors. - Reducing pain, Rapid clearance minimizes phototoxicity. - Significantly shortens treatment wait time(<1 hour) compared to conventional prodrug(5-ALA, 3-4hours). 4) Strong IP exclusivity & Synergistic platform - Secured material patents for NCE(MPP100) and original manufacturing technology for dedicated laser devices. - Synergistic 'Drug-Device' platform, ensuring clinical performance and a robust 'Razer-Blade' business model.
Development Stage	Preclinical
Route of Administration	Topical (intravaginal gel/cream) combined with targeted laser irradiation.

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