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Development of New Generation HPV Therapeutic Vaccine: Through Dual Targeting of Dendritic Cell TLR5/NLRC4 Pathways

Chonnam National University R&BD Foundation

ONCOLOGY | **Lead**

Product Type	rProtein
Indication	High-risk HPV infection–induced cervical intraepithelial neoplasia (CIN) and early-stage cervical cancer
Target	Dendritic cells ($CD11c^+$ DCs) via dual activation of TLR5/NLRC4 pathways using HPV16/18/52/58/33/45 E7 ΔNLS antigens
MoA(Mechanism of Action)	DC-targeting peptide (DCpep6) delivers antigens efficiently to dendritic cells, while the built-in flagellin (FlaB) adjuvant activates both extracellular TLR5 and intracellular NLRC4 pathways, inducing strong $CD8^+$ CTL responses within an All-in-One (AIO) vaccine platform.
Competitiveness	① World's first "All-in-One" antigen + adjuvant + DC-targeting construct (AIO-Vax) ② Dual platform (Protein & mRNA-LNP) ③ Coverage of Asia-prevalent high-risk HPV types (16, 18, 52, 58, 33, 45) ④ Compliant with WHO/BMGF/RIGHT Foundation therapeutic vaccine criteria ⑤ Supported by extensive patent & publication portfolio
Development Stage	Lead
Route of Administration	Subcutaneous administration (Prime–Boost therapeutic strategy)