

Development of a First-in-Class Nanodrug (DC-MT) Candidate for Colorectal Cancer Radiotherapy

Dr.cure co.,LTD.



ONCOLOGY

Candidate

Product Type	Others-Synth.
Indication	Concurrent chemoradiotherapy for solid tumors
Target	Hypoxic tumor microenvironment cancer
MoA(Mechanism of Action)	DC-MT is an FDA-approved polymer-coated manganese oxide nanoparticle. Upon entering cancer cells via intravenous injection, the biodegradable polymer degrades to release the manganese oxide core. This core reacts with ROS to generate oxygen, alleviating tumor hypoxia to normoxia and thereby maximizing the efficacy of chemotherapy and radiotherapy
Competitiveness	1. Unlike external oxygen delivery or HIF inhibitors, it is innovative in that it simultaneously removes ROS and generates oxygen by leveraging cancer cell specific metabolic byproducts (H₂O₂) 2. The released MnO₂ is distinctive because it can simultaneously induce hypoxic alleviation and additional ROS generation during radiotherapy, enabling a single nanoparticle to regulate multiple tumor microenvironment factors at once.
Development Stage	Candidate
Route of Administration	Intravenous injection

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