257 Novel Cyclic Dinucleotide Analogues as STING Agonists

Asset Overview

Product Type	Small Molecule
Indication	Oncology
Current Stage	Lead Identification/optimization
Target(MoA)	STING inhibition
Brief Description	Researchers at UC San Diego have developed novel series of c-diGMP analogues that were able to activate the innate immune response through the STING pathway in mammalian cells. Unlike Aduro's ADU-S100 where phosphate group is modified into S analogue, these analogues incorporate novel nitrogenous bases with regular phosphates.
Organization	University of California, San Diego

Differentiation

□ **BACKGROUND**

- Stimulator of interferon genes (STING) is known to be a central mediator of innate immunity. It is a 379 amino acid protein expressed in various endothelial and epithelial cell types as well as in hematopoietic cells such as T cells, macrophages and dendritic cells. STING is naturally activated by aberrant DNA species via formation of native cyclic dinulcleotides (CDNs) in cytosol of the cell. When stimulated STING induces the expression of type I interferon (IFN), cytokines and T cell recruitment factors that result in the activation of macrophages and dendritic cells, innate effector cells such as natural killer (NK) cells and priming of tumor specific T cells
- Recent studies have shown that the STING pathway is essential for radiation induced and spontaneous natural antitumor T cell responses. Tumor cells often induce an immunosuppressive microenvironment favoring cancer development. Targeting STING pathway by using STING agonists to produce IFNs for enhancing antitumor immune response may provide an alternative strategy for the improvement of cancer immunotherapy

□ **TECHNOLOGY DESCRIPTION**

- Researchers at UC San Diego have developed novel series of c-diGMP analogues that were able to activate the innate immune response through the STING pathway in mammalian cells. Unlike Aduro's ADU-S100 where phosphate group is modified into S analogue, these analogues incorporate novel nitrogenous bases with regular phosphates

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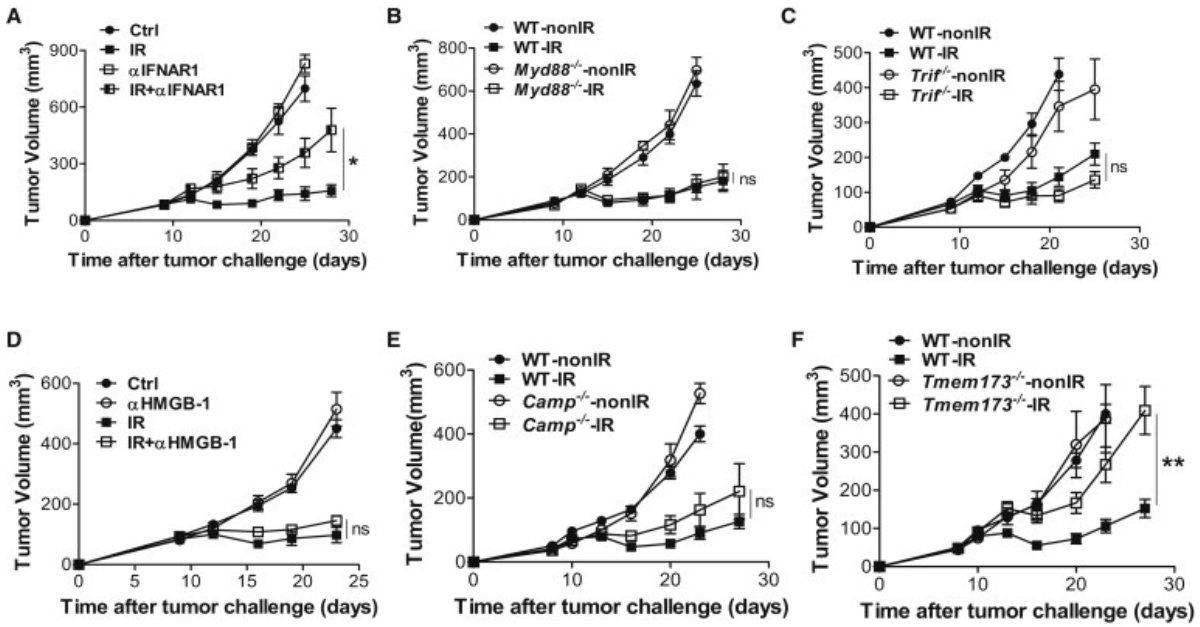
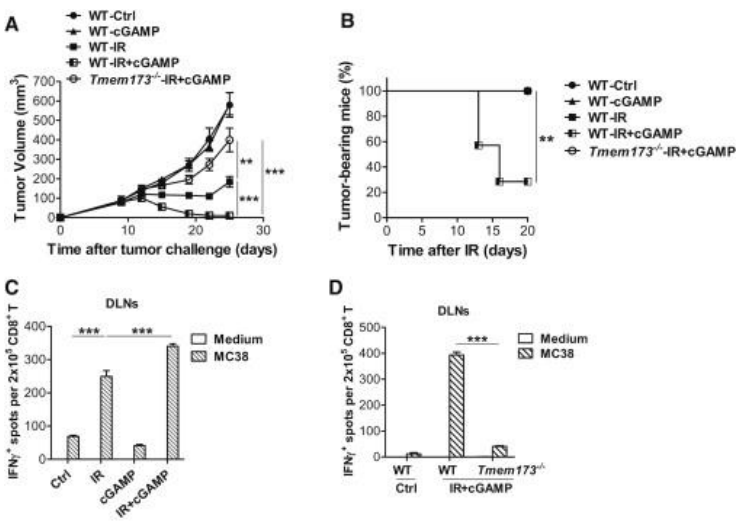
Key Data

STING Signaling Is Required for the Antitumor Effect of Radiation



cGAMP Treatment Promotes the Antitumor Effect of Radiation in a STING-Dependent Manner



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UCSD 논

Immunity. 2014 Nov 20;41(5):843-52.

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Intellectual Property

Patent No.	
Application Date	
Status	
Country	

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