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# Cyclic dinucleotides (CDNs) anti-tumors response by activating DC and NK cell crosstalk

Juan Fu[1*], Drew Pardoll[2], Young J Kim[1,2]

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Intracellular bacterial, *Listeria monocytogenes* generates cyclic diadenosine monophosphate (c-di-AMP) can active interferon regulatory factor3 (IRF3) and nuclear factor kappa-light-chain-enhancer (NF-$\kappa$B) and induces B cell and macrophage secretion of IFN-β [1]. Cyclic diguanylic acid (c-di-GMP) also acts as an important signaling molecule in a variety of bacterial species infection functions. IFN-β actives NK cells through $Tyk_2$-STAT1 signal pathway. Our studied showed CDNs anti-tumor effective dependent IFNα/β receptors (IFNAR1/IFNAR2) on the cell plasma membrane. Some study showed c-di-GMP significantly inhibited the proliferation of human colon cancer cells in vitro [2]. Cyclic dinucleotides (CDNs, c-di-AMP and c-di-GMP) are sensed by STING (stimulator of interferon genes). But CDNs were developed for prevent and therapeutic cancers, it was a novel method. We combined GM-CSF-producing tumor vaccine and TLR agonists enhanced systemic anti-tumor immunity. Our studied showed the regimen significantly inhibition mice tumors growth in B16 melanoma and colon cancer in vivo.

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**Authors' details**
[1]Department of Otolaryngology - Head & Neck Surgery, Johns Hopkins University, School of Medicine, Baltimore, MD, USA. [2]Department of Oncology and the Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, School of Medicine, Baltimore, MD, USA.

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[1]Department of Otolaryngology - Head & Neck Surgery, Johns Hopkins University, School of Medicine, Baltimore, MD, USA
Full list of author information is available at the end of the article