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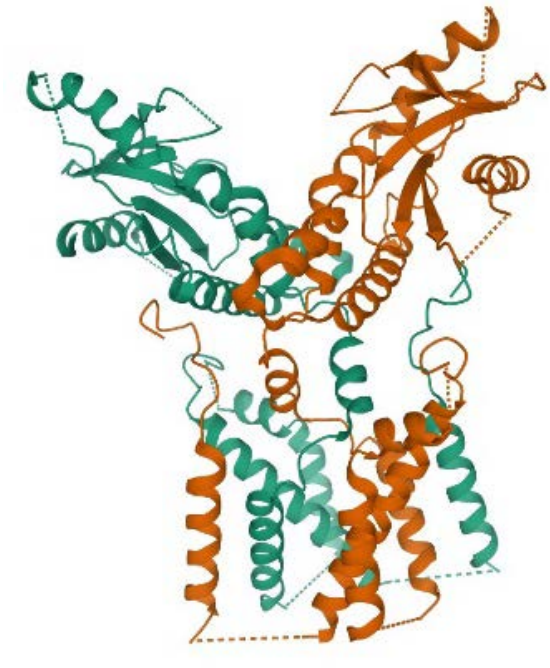
Licensing Opportunity

TTO – Technology Transfer Office

Compounds inhibiting STING mediated cytokine production



Three-dimensional structure of human STING.

Ref. Nr

6.1857

Keywords

AGS
IFN I
Interferonopathies
STING

Intellectual Property

WO 2019/201939

Publications

Simone M Haag et al. "Targeting STING With Covalent Small-Molecule Inhibitors" Nature. 2018 Jul;559(7713):269-273. doi: 10.1038/s41586-018-0287-8.

Date

08/06/2020

Description

Stimulator of Interferon Genes protein STING) gain of function mutations, or its dysregulated continuous activation, is involved in the aberrant activation of innate immune pathways, including a broad range of auto-inflammatory conditions. Hence, specifically targeting STING function by means of small molecule pharmacological intervention is a promising way to treat and/or prevent STING-associated diseases, such as auto-inflammatory diseases.

The identified compounds are highly potent and selective small-molecule antagonists, suppressing STING-dependent type I interferon (IFN) induction in both human and mouse cells, and proved able to attenuate pathological features of auto-inflammatory diseases in mice. The compounds have been selected by high-throughput on the binding to STING and the modification of the transmembrane-located cysteine C91, blocking the palmitoylation of STING.

Advantages

Selective inhibition of STING-dependent signaling, without interference with RIG-I or TBK1-mediated IFN I induction.

Applications

- Treatment of STING-associated diseases: type I interferonopathies (e.g. STING-associated vasculopathy with onset in the infancy (SAVI), Aicardi-Goutières Syndrome (AGS)), inflammation-associated disorders (e.g. systemic lupus erythematosus)
- Prevention of STING-associated diseases