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Publication(s)

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External Link(s)

• From the lab of Dr. Chuan-Yuan Li

Improving immune checkpoint blockade therapy by inhibiting ATM protein

Unmet Need

The great enthusiasm for immune checkpoint blockade (ICB) therapy is justified by the spectacular, durable successes it has had in some previously difficult to treat cancers such as melanoma and lung cancer. However, despite the successes, ICB therapy still only benefits 10-30% of cancer patients and many patients suffer from undesirable side effects. Therefore, novel approaches are needed to identify those patients who can benefit from ICB treatment. Further, there is a need for new compositions and methods for enhancing the effectiveness of ICB therapy to be more effective on a wider range of cancers and patients.

Technology

Duke inventors have reported a method to enhance immune checkpoint blockade therapy. This is intended to be delivered to cancer patients alongside an immune checkpoint inhibitor. Specifically, the inventors have discovered that inhibition of the ataxia telangiectasia mutated (ATM) protein could potentiate ICB therapy by promoting cytoplasmic leakage of mitochondrial DNA (mtDNA) and activation of the cGAS/STING pathway. This has been validated by analyzing human clinical data and demonstrated alongside anti-PD-1 therapy in mouse studies.

Advantages

- Could improve outcomes for cancer patients using immune checkpoint blockade therapy
- Validated by analyzing human clinical data
- Demonstrated alongside anti-PD-1 therapy in mouse studies