

Technology Opportunity, Ref. No. BS-20/020

Treatment of malignant neoplasms

This invention relates to MDM2 modulators in treatment and diagnosis of cancer characterized by decreased or abrogated function of GATA3.

- Keywords** MDM2, GATA3, modulator, synthetic lethal interaction, estrogen receptor (ER)-positive breast cancers, malignant cancer, treatment, diagnosis
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- Reference** <https://www.biorxiv.org/content/10.1101/2020.05.18.101998v1>
- Background** GATA3 is one of the most frequently mutated genes in estrogen-receptor (ER)-positive breast cancers and can be found mutated in 12% - 18% of primary and metastatic ER-positive breast cancers. The loss of GATA3 expression is strongly associated with failure to respond to hormonal therapy and poor prognosis. Unfortunately, targeted therapies directed at GATA3 deficiency are not available.
- Invention** Capitalizing on a newly identified synthetic lethal interaction between GATA3 and MDM2, this invention provides for an innovative new approach to pharmacologically inhibit MDM2 with the ultimate goal of targeting GATA3 deficiency in cancer treatment. Inhibition of MDM2 hampers cell proliferation and induces apoptosis in cells with reduced GATA3 activity. Since GATA3 deficiency has been identified in breast, bladder or prostate cancer, the technology offers the potential to develop treatments for various neoplasms, in particular malignant neoplasms. The invention includes the use of a number of MDM2 inhibitors, and correlates GATA3 status as a predictive biomarker of response. The approach has been confirmed in vitro and in animal models.
- Fields of Use** Treatment of neoplasms, in particular malignant neoplasms. Use of GATA3 status as a predictive biomarker of treatment response.
- Patent Status** Patent application filed
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