Treatment Of Melanoma With Ferroptosis Inducing Agents
Tech ID: 28887 / UC Case 2017-879-0

SUMMARY
UCLA researchers in the Departments of Molecular and Medical Pharmacology and Medicine have developed a novel method to treat melanoma.

BACKGROUND
Immune checkpoint blockade immunotherapy with anti-PD1 antibody is the preferred treatment for patients with metastatic melanoma that has resisted other therapies. However, there remains a subset of patients that does not respond to or relapses following this therapeutic strategy, as de-differentiation of melanoma cells is known to increase resistance to conventional immunotherapies. So far there is no therapy specifically tailored to target these immunotherapy-resistant de-differentiated melanoma cells.

INNOVATION
Researchers at UCLA have developed a method to treat melanoma that resists conventional immune checkpoint blockade immunotherapy by using ferroptosis-inducing drugs. Ferroptosis is a type of cell death resulting from accumulation of reactive oxygen species that degrade lipids in the cell membrane. De-differentiating cells, such as the immunotherapy-resistant or kinase inhibitor-resistant melanoma, are highly susceptible to ferroptosis. Combination treatment with ferroptosis-inducing agents can be a valuable, new synergistic approach for overcoming resistance to melanoma therapy.

APPLICATIONS
- Combinatorial therapy for cancer treatment
- Stratification method for skin cancer treatment
- Screening method for immunotherapy-resistant or kinase inhibitor-resistant melanomas

ADVANTAGES
- Specifically targets a subset of cancer cells that resist other forms of therapy
- Combinatorial use with conventional immunotherapy or kinase inhibitors prevents tumor escape due to de-differentiation

PATENT STATUS
Patent Pending

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS
- Microfluidic and Solid-State Beta Camera In-Vitro Kinase Radioassay
- Statistical Comparison of Rank Lists and Molecular Profiles

INVENTORS
- Graeber, Thomas G.

OTHER INFORMATION
KEYWORDS
melanoma resistant ferroptosis skin cancer drugs immunotherapy PD1 CTLA4 combination immune checkpoint blockade, MAP kinase pathway, MAPK, BRAF inhibitors, MEK inhibitors

CATEGORIZED AS
- Medical
  - Disease: Cancer
  - Disease: Dermatology
  - Therapeutics

RELATED CASES
2017-879-0