First clinical trial of innovative cancer drug targeting HSF1 pathway begins

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Credit: Institute of Cancer Research

The first cancer patients are to receive doses of an innovative new drug that targets a master regulatory pathway in cells, as part of a new clinical trial.

The drug, called NXP800, was discovered at The Institute of Cancer Research, London, and targets the pathway regulated by the HSF1

transcription factor.

HSFI is a 'master switch' in cells that controls the activity of a variety of genes—and its signaling is hijacked by a variety of cancers to support their growth and spread.

The phase I clinical trial is sponsored by oncology-focused biopharmaceutical company Nuvectis Pharma, which is now leading the drug's development.

Targeting a master switch

The trial is being led by Professor Udai Banerji, Deputy Director of Drug Development at the ICR and The Royal Marsden NHS Foundation Trust, in patients with advanced cancers.

The trial will have two parts: dose escalation, to evaluate the safety and tolerability of NXP800, and dose expansion, which will also evaluate its anti-tumor activity.

Ovarian cancer hope

The dose-expansion phase will focus on evaluating NXP800 in patients selected using biomarker analysis, initially in clear cell ovarian and endometrioid ovarian cancers.

Preclinical studies in cancer cells and in mice have suggested the drug could be particularly effective in women with ovarian clear cell and endometrioid ovarian cancers with defects in the ARID1A gene.

During the trial, expert teams in pharmacodynamics and pharmacokinetics from the ICR will lead on gathering data on the

molecular effects of NXP800 and how it is processed by the body. Biomarkers measured throughout this process will form a 'pharmacological audit trail' of the drug's behavior.

ICR-discovered drug

The trial follows the discovery of NXP800 in a multi-year project carried out by an ICR team led by Professor Paul Workman, Harrap Professor of Pharmacology and Therapeutics at ICR, with earlier work supported by the ICR and funding organizations including Cancer Research UK and the Battle Against Cancer Investment Trust (BACIT).

The medicinal chemistry component of the multidisciplinary research project was led by Professor Keith Jones at the ICR.

Trial chief investigator Professor Udai Banerji, Deputy Director of Drug Development at The Institute of Cancer Research, London, and The Royal Marsden NHS Foundation Trust, said: "We're very pleased to begin the first trial of this innovative new drug, NXP800, in partnership with Nuvectis. We look forward to assessing the drug's safety and pharmacokinetics, checking it is acting on cancer signaling as expected, and optimizing its dose and schedule. We hope to unlock its therapeutic potential in specific hard-to-treat cancers where new treatments are urgently needed."

Taking discoveries to patients

Professor Kristian Helin, Chief Executive of The Institute of Cancer Research, London, said: "We're delighted to see this innovative inhibitor of HSF1 signaling enter its first clinical trial. I hope the results of clinical trials will show that this new drug can make a real difference in the treatment of cancers patients, including those with clear cell and

endometrioid ovarian cancers. NXP800 is the 12th ICR-discovered drug we've taken into clinical trials for cancer patients since 2005, in collaboration with industrial partners like Nuvectis. That track record is unrivaled in the academic world."

Ron Bentsur, Co-Founder, Chairman and Chief Executive Officer of Nuvectis, said: "We are pleased to have achieved this important milestone in the NXP800 development program. NXP800 has demonstrated great promise in preclinical studies, and we're excited to advance it into clinical trials."

Provided by Institute of Cancer Research