ICR The Institute of Cancer Research

Commercial opportunity

BTG 945/ONX-0801 for treatment of high-grade serous ovarian cancers expressing high levels of the alpha folate receptor

The Institute of Cancer Research, London and Boston Scientific are seeking a partner to enable progression of this phase-II-ready compound and companion biomarker diagnostic test through to mid-late stage clinical development.

Key Features

- High-grade serous ovarian carcinoma is highly aggressive and accounts for 70-80% of ovarian cancer deaths (Lisio et al. 2019) with average progression-free survival of 3-4 months. BTG 945/ONX-0801 has shown highly promising evidence of tumour shrinkage in patients with high-grade ovarian cancer in a phase I expansion cohort.
- The compound and its companion diagnostic test are phase II ready assets.
- Safe dose established in phase I dose escalation study and positive pharmacodynamic data collected.
- The partnership was previously behind the discovery and development of abiraterone (Zytiga®, Johnson & Johnson), used widely in prostate cancer treatment.

Intellectual property

The intellectual property for the drug and biomarker test are owned by Boston Scientific, with the Institute of Cancer Research (ICR) a partner. Earlier research was funded by Amgen and Cancer Research UK.

Patents and patent applications related to the compound, its uses, dosage regimens (WO2018211433) and synthetic methods suitable for large-scale production together with know-how package are in place.

Commercial Opportunity

Worldwide commercial rights to this programme are on offer. If successful, data from the Phase II study would be adequate to gain accelerated approval and could establish the drug as standard-of-care treatment for high-grade, platinum-resistant/refractory disease ovarian cancer patients pre-screened for high alpha-folate expression – an orphan drug population (current standard of care liposomal doxorubicin).

Key publications

Banerjee S et al. *A phase I trial a FR alpha targeted thymidylate synthase inhibitor CT900 exploring four schedules of treatment in expansion cohorts of patients with high-grade serous ovarian cancer.* Journal of Clinical Oncology, 2020 ASCO Meeting: abstract 6043.

Tochowicz A et al. *Development and binding mode assessment of ... BGC 945, a novel thymidylate synthase inhibitor that targets tumor cells.* J Med Chem. 2013 Jul 11;56(13):5446-55.

Pillai RG et al. *Imaging pharmacodynamicsof the alpha-folate receptor-targeted thymidylate synthase inhibitor BGC 945.* Cancer Res. 2008 May 15;68(10):3827-34.

Gibbs DD et al. *BGC 945, a novel tumor-selective thymidylate synthase inhibitor targeted to alpha-folate receptor-overexpressing tumors.* Cancer Res. 2005 Dec 15;65(24):11751-8.

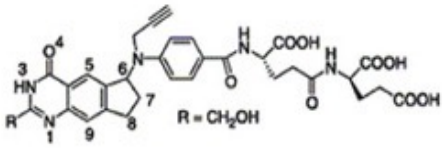

Fig. 1. Structure of ONX-0801 / BTG 945

Background

A collaboration between ICR and healthcare company BTG (later acquired by Boston Scientific) led to the discovery and development of a first-in-class, small-molecule thymidylate synthase inhibitor targeted at the alpha folate receptor. Further work on the programme was funded by Carrick Therapeutics.

The phase II-ready compound, called BTG 945 (previously ONX-0801), targets cancer cells via alpha-folate receptor, highly over-expressed in some ovarian cancer patients.

A treatment schedule of intravenous injection once every two weeks has shown unusually clear evidence of reproducible responses during the early stages of drug development– particularly in women with high-grade, serous ovarian cancers that express high levels of the alpha folate receptor, which are generally not found elsewhere in the body.

The compound has demonstrated safety in the phase I programme. [(18)F]FLT-PET scans have shown increased uptake of the compound in tumours, and positive pharmacodynamic data has been collected.

The team has also developed a companion biomarker diagnostic which will enable clinicians to match treatment to those most likely to benefit during future clinical trials.

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Lead Scientist

Professor Udai Banerji is Deputy Director of the Drug Development Unit at ICR and Royal Marsden. He heads the Clinical Pharmacodynamics Biomarker Group and Clinical Pharmacology-Adaptive Therapy Group.

Business & Innovation Office

The ICR's interactions with industry partners are led by our Business and Innovation Office, which oversees a large portfolio of partnership and licensing opportunities across a range of oncology research.

Contact the Business and Innovation Office for more information on our licensing and partnering opportunities.

Read more about our commercialisation work and sign up for our industry email newsletter at icr.ac.uk/partnerships

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