

Topline Results of Phase I Clinical Trial of iPS-NKT in Patients with Relapsed or Refractory Head and Neck Cancer

Tokyo, Japan, March 1, 2024/ -- BrightPath Biotherapeutics Co., Ltd. (TSE Growth: 4594), a clinical-stage biopharmaceutical company focused on developing novel immunotherapeutics, announce that new first-in-human data from iPS cell-derived NKT cell ("iPS-NKT", BP2201) being developed in investigator-initiated Phase I study at Chiba University Hospital demonstrated early clinical activity in patients with heavily pretreated relapsed and refractory head and neck cancers. The topline result was presented by Professor Shinichiro Motohashi MD, Ph.D, of Chiba University, at CD1-MR1 2024 Conference.

The iPS-NKT cell therapy, pioneered by RIKEN and further advanced with the backing of the Japan Agency for Medical Research and Development (AMED), has been exclusively licensed to BrightPath for global development, manufacturing, and marketing by RIKEN.

Natural killer T ("NKT") cells represent a rare subset of T cells that bridges innate and adaptive immunity, exhibiting diverse anti-tumor effects. Autologous iNKT cell therapy demonstrated promising outcomes in patients with r/r HNSCC and NSCLC by clinical research at Chiba University. However clinical-scale manufacturing posed a significant challenges for expanding its clinical application. The use of induced pluripotent stem ("iPS") cell technology overcame the hurdle owing to its unparalleled proliferating capacity. The first-in-human Phase I study of the iPS NKT cells has been conducted in patients with r/r HNSCC, with the primary endpoint focusing on tolerability and safety assessment.

In this study, iPS-NKT cells were administered at a low-dose (3×10^7 cells/m²) and high-dose (1×10^8 cells/m²) levels, employing multiple dosing regimens. The cells were delivered vja the tumor artery as a monotherapy without prior lymphodepletion, aiming to leverage their unique capacity to prime endogenous anti-tumor T cells.

Through the study, the primary endpoint of tolerability and safety was achieved, with the high-dose (1×10^8 cells/m²) identified as the Maximum Tolerated Dose (MTD).

The topline summary is as follows.

- iPS-NKT cells were administrated to 10 patients: 3 at a low-dose of 3×10^7 cells/m² and 7 at a high-dose of 1×10^8 cells/m². Among them, 6 patients received 3 doses, 3 patients received two doses, and 1 patient received 1 dose.
- While one patient receiving the high dose experienced a drug rash, classified as Dose Limiting Toxicity (DLT), both the low and high doses were well tolerated.
- The most frequently observed treatment-related adverse events (trAEs) were Grade 1 or 2 fever, occurring in 1 patient at the low dose and 4 patients at the high dose

- The change in tumor size in patients who received two or more doses were as follows.
 - Low-dose : 1 stable disease (SD), 2 progressive disease (PD)
Disease control rate (DCR) 33.3% (1 of 3)
 - High-dose: 4 stable disease (SD), 1 progressive disease (PD), 1 Not Evaluable
Disease control rate (DCR) 80% (4 of 5 evaluable patients)
- Some patients receiving the high dose experienced some level of tendency toward tumor shrinkage, which has indicated encouraging early clinical activity of iPS-NKT cells.

These initial safety and efficacy findings from the first-in-human study are encouraging and provide preliminary evidence that employing iPS-NKT as effector cells for a novel allogeneic CAR-T platform could prove to be an effective cancer treatment strategy. Based on these results, we are moving forward with the development of CAR-transduced iPS-NKT cells.

About BrightPath:

BrightPath is a clinical stage biopharmaceutical company focused on the development of novel cancer immuno-therapies to transform cancer treatment. BrightPath is actively involved in developing cell therapies currently in clinical trials, immunomodulatory antibodies and new cancer vaccine targeting tumor-specific neoantigens. For more information, visit www.brightpathbio.com/english/index.html

About RIKEN:

RIKEN is Japan’s largest and most comprehensive research organization for basic and applied science and a world leader in a diverse array of scientific disciplines. For nearly a century since its foundation in 1917, RIKEN has fostered pioneering, innovative research in fields spanning the entire range of the natural sciences, from developmental biology and neuroscience to quantum physics and computer science. Today, RIKEN encompasses a network of world-class research centers across Japan, with main campuses in Wako, Tsukuba, Yokohama, Kobe and Harima offering state-of-the-art facilities that rank among the best in the world. This high-quality, high-performance research environment, combined with a uniquely bottom-up approach to scientific innovation, has enabled RIKEN to foster an environment in which researchers are able to thrive.

Forward-Looking Statements:

This news release contains forward-looking statements that are based on the current expectations and beliefs of BrightPath. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements. BrightPath cautions that these forward-looking statements do not guarantee our future financial results but involve risks and uncertainties that could cause actual results to differ materially from those discussed in the forward-looking statements. These forward-looking statements speak only as of the date of this press release and BrightPath assumes no duty to update forward-looking statements, except as may be required by law.

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