**Rafael Pharmaceuticals Enters into Collaboration with the National Institutes of Health (NIH) to Test CPI-613® (devimistat) in Cytokine Independent (Acute) HTLV-1 Associated Adult T-cell Leukemia/Lymphoma**

Cranbury, NJ, Oct. 14, 2019 - [Rafael Pharmaceuticals, Inc.](https://rafaelpharma.com/) (“Rafael” or the “Company”), a leader in the growing field of cancer metabolism-based therapeutics, announced today that it has entered into a collaboration with the National Cancer Institute (NCI), part of the [National Institutes of Health](https://www.nih.gov) (NIH). This collaboration will test CPI-613® (devimistat), Rafael’s first-in-class clinical lead compound, in cytokine independent (acute) HTLV-1 (human T-cell leukemia virus type 1) associated adult T-cell leukemia/lymphoma. Rafael will provide the compound for the study.

Through this collaboration, the NCI will conduct a series of pre-clinical studies to test the efficacy of devimistat, both as a single agent and in combination with other molecules. Devimistat targets enzymes that are involved in cancer cell energy metabolism and are located in the mitochondria of cancer cells.

“We are honored to enter into a collaboration with the NCI,” said Sanjeev Luther, President and CEO of Rafael. “We strongly identify with their mission of fostering innovative research in order to protect and improve the health of the nation. We are hopeful that this collaboration will allow us another opportunity to improve the lives and health of patients across the country.”

**About CPI-613® (devimistat)**

CPI-613® (devimistat) is a first-in-class clinical lead compound of Rafael, which targets enzymes that are involved in cancer cell energy metabolism and are located in the mitochondria of cancer cells. Devimistat is designed to target the mitochondrial tricarboxylic acid (TCA) cycle, a process essential to tumor cell multiplication and survival, selectively in cancer cells. Devimistat substantially increases the sensitivity of cancer cells to a diverse range of chemotherapeutic agents. This synergy allows for potential combinations of devimistat with lower doses of these generally toxic drugs, for increased efficacy with lower patient’s side effects. Combination therapies with devimistat represent a diverse range of opportunities to benefit patients with many different cancers. The U.S. Food and Drug Administration (FDA) has given Rafael approval to initiate pivotal Phase 3 clinical trials in pancreatic cancer (AVENGER 500) and acute myeloid leukemia (ARMADA 2000), and has designated devimistat as an orphan drug for the treatment of pancreatic cancer, acute myeloid leukemia, myelodysplastic syndrome, peripheral T-cell lymphoma and Burkitt’s lymphoma. The EMA has granted orphan drug designation to devimistat for pancreatic cancer and acute myeloid leukemia.

**About Rafael Pharmaceuticals, Inc.**

Rafael Pharmaceuticals is a leader in the growing field of cancer metabolism. The company is developing a new, first-in-class category of metabolic oncology therapeutics that attack hard-to-treat cancers by targeting the metabolic processes the disease needs to survive, grow and proliferate. Rafael Pharmaceuticals’ lead compound, CPI-613® (devimistat), is a highly selective, well-tolerated and effective anti-cancer agent that is being evaluated in ongoing and completed Phase 1, 2 and 3 clinical trials, under the company’s sponsorship. Devimistat has been granted orphan drug status by the FDA for the treatment of pancreatic cancer, acute myeloid leukemia (AML), myelodysplastic syndrome (MDS) and Burkitt’s and peripheral T-cell lymphomas. The Company's investors include Rafael Holdings, Inc. (NYSE AMERICAN: RFL). For more information, please visit [www.rafaelpharma.com](http://www.rafaelpharma.com).

**Safe Harbor Statement**

This press release contains forward-looking statements. These statements relate to future events or the company’s future financial performance. In some cases, forward-looking statements can be identified by terminology such as "may", "will", "should", "expect", "plan", "anticipate", "believe", "estimate", "predict", "potential" or "continue", the negative of such terms, or other comparable terminology. These statements are only predictions. Actual events or results may differ materially from those in the forward-looking statements as a result of various important factors. Although Rafael believes that the expectations reflected in the forward-looking statements are reasonable, such statements should not be regarded as a representation by the company, or any other person, that such forward-looking statements will be achieved. The business and operations of the company are subject to substantial risks which increase the uncertainty inherent in forward-looking statements. Rafael undertakes no duty or obligation to update any of the forward-looking statements, whether as a result of new information, future events or otherwise.

In light of the foregoing, readers are cautioned not to place undue reliance on such forward-looking statements.

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