Black Diamond Therapeutics Announces Publication of New Computational and Functional Analyses of HER2 Mutations Based on its Proprietary MAP Discovery Engine

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- Peer-reviewed publication highlights 22 new oncogenic HER2 driver mutations identified and experimentally validated with MAP discovery engine -

CAMBRIDGE, Mass. and NEW YORK, May 12, 2022 (GLOBE NEWSWIRE) -- Black Diamond Therapeutics, Inc. (Nasdaq: BDTX), a precision oncology medicine company pioneering the discovery and development of MasterKey therapies, today announced the publication of data identifying new oncogenic HER2 allosteric mutations that support the Mutation-Allostery-Pharmacology (MAP) discovery engine's capabilities and further suggest the need for novel inhibitors to treat HER2-mutant cancers. The paper, titled "Computational and Functional Analyses of HER2 Mutations Revealing Allosteric Activation Mechanisms and Altered Pharmacologic Effects" by Ishiyama et al. was published online by the American Association for Cancer Research (AACR)'s Cancer Research Journal on May 3, 2022.

"At the core of our precision medicine approach to cancer treatment is the ability to identify new, full spectrum oncogenic mutations. This study provides strong rationale for the power of our MAP discovery engine as we identified new oncogenic HER2 allosteric mutations that further suggest the need for novel treatment options. These findings support our overall approach to cancer treatment by demonstrating the value and importance of oncogenicity prediction, biological validation, protein conformation-based drug design and MasterKey inhibitor development against mutation families," said Elizabeth Buck, Chief Scientific Officer of Black Diamond Therapeutics. "In this study, Black Diamond's proprietary MAP-scoring and functional validation analyses were able to provide new insights into the oncogenic activity and therapeutic targeting of HER2 mutations in cancer in addition to identifying 22 new oncogenic HER2 mutations. As the number of unique mutations across cancers is expected to rise over time, there remains a need for an effective means of identification of oncogenic mutations. We believe that our MAP technology has the potential to fill this gap and provide critical insights for the use of precision medicine to treat cancers driven by rare oncogenic mutations."

The peer-reviewed paper describes computational and functional analyses of HER2 mutations showing that Black Diamond's MAP discovery engine has the ability to identify and experimentally validate 22 new oncogenic HER2 driver mutations. By applying its computational approach to 820 single-nucleotide variants, a list of 222 known mutations and potential driver mutations was produced. Of these 222 mutations, 37 HER2 mutations were experimentally determined to be driver mutations, comprised of 15 previously characterized and 22 newly identified oncogenic mutations. Black Diamond researchers found that these oncogenic mutations mostly affected allosteric sites in the extracellular domain (ECD), transmembrane domain (TMD), and kinase domain (KD) of HER2. In addition, Black Diamond was able to describe the unique pharmacological characteristics of these new HER2 driver mutations that render them susceptible to unique drug discovery screening strategy.

About Black Diamond
Black Diamond Therapeutics is a precision oncology medicine company pioneering the development of novel MasterKey therapies. Black Diamond is addressing the significant unmet need for novel precision oncology therapies for patients with genetically defined cancers who have limited treatment options. Black Diamond is built upon a deep understanding of cancer genetics, onco-protein function, and drug discovery. The Company's proprietary Mutation-Allostery-Pharmacology, or MAP drug discovery engine, is designed to allow Black Diamond to analyze population-level genetic sequencing tumor data to predict and validate oncogenic mutations that promote cancer across tumor types as MasterKey mutations. Black Diamond discovers and develops selective MasterKey therapies against these families of oncogenic mutations. Black Diamond was founded by David M. Epstein, Ph.D., and Elizabeth Buck, Ph.D. For more information, please visit www.blackdiamondtherapeutics.com.

Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. Such statements include, but are not limited to, statements regarding the MAP discovery engine and the potential future benefit of the MAP discovery engine, including its ability to identify additional allosteric mutations. Any forward-looking statements in this statement are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. Risks that contribute to the uncertain nature of the forward-looking statements include those risks and uncertainties set forth in the Company's 2021 annual report on Form 10-K filed with the United States Securities and Exchange Commission and its other filings filed with the United States Securities and Exchange Commission. All forward-looking statements contained in this press release speak only as of the date on which they were made. The Company undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

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