

Kite Pharma and Alpine Immune Sciences Announce Research Collaboration and License Agreement to Enhance Immune Response in the Tumor Microenvironment

- *Kite to Exclusively License Transmembrane Immunomodulatory Protein Technology for Applications to CAR and TCR Programs*

SANTA MONICA, Calif. and SEATTLE, Wash., October 27, 2015 -- Kite Pharma, Inc. (Kite) (Nasdaq: KITE) today announced that it has entered into a worldwide research and license agreement with Alpine Immune Sciences, Inc. (AIS), a privately-held biotechnology company, to discover and develop protein-based immunotherapies targeting the immune synapse to treat cancer. AIS will grant Kite an exclusive license to two programs from its transmembrane immunomodulatory protein (TIP™) technology, which Kite plans to further engineer into chimeric antigen receptor (CAR) and T cell receptor (TCR) product candidates. This collaboration will accelerate Kite's efforts to establish the next generation of engineered T cell therapies specifically designed to overcome the inhibitory mechanisms present in the tumor microenvironment.

"The field of immuno-oncology has the potential to significantly improve the outcome of patients with cancer," said Arie Beldegrun, M.D., FACS, Chairman, President and Chief Executive Officer of Kite. "We believe the ability of AIS' TIP™ technology to modulate the immune synapse can be incorporated into engineered T cell therapies to advance CAR and TCR product candidates into multiple tumor types. This collaboration is another example of Kite's continuing commitment to advancing our pipeline through transformative technologies grounded in innovative science."

Under the terms of the collaboration, Kite will make an upfront payment to AIS of \$5 million and additional payments to support AIS' research. AIS will be eligible to receive milestone payments based upon the successful achievement of pre-specified research, clinical, and regulatory milestones totaling \$530 million plus low single-digit royalty payments on product sales. Kite will receive an exclusive, worldwide license to research, develop and commercialize engineered autologous T cell therapies incorporating two programs coming from the AIS platform.

"AIS was established with a team of experienced scientists to capitalize on our keen understanding of immunology and protein engineering," said Mitchell H. Gold, M.D., Executive Chairman. "At AIS, we have a robust discovery platform to identify molecules capable of directly modulating the immune synapse. We look forward to working with Kite, a company that uniquely understands the complexities surrounding cancer biology."

About Kite Pharma, Inc.

Kite Pharma, Inc., is a clinical-stage biopharmaceutical company engaged in the development of novel cancer immunotherapy products, with a primary focus on engineered autologous cell therapy (eACT™) designed to restore the immune system's ability to recognize and eradicate tumors. Kite is based in Santa Monica, CA. For more information on Kite Pharma, please visit www.kitepharma.com.

About Alpine Immune Sciences, Inc.

Alpine Immune Sciences, Inc. is a privately-held biotechnology company focused on developing protein-based immunotherapies that harness the body's own immune system to target cancer and autoimmune disease. AIS has developed a proprietary variant immunoglobulin domain (vlgD™) platform to enhance or diminish an immune response. The vlgD™ platform, unlike other therapeutic approaches in development or available commercially that address a single target, is designed to interact with multiple targets in the immune synapse. AIS has also developed a transmembrane immunomodulatory protein (TIP™) technology, based on the vlgD™ platform, for direct applications with engineered T cell therapies to potentially improve their efficacy and persistence. AIS was

launched in 2015 with series seed financing from Alpine BioVentures and is headquartered in Seattle, WA. Alpine BioVentures is a Seattle-based healthcare venture firm led by Dr. Mitchell H. Gold, Managing Partner, a long-time executive and pioneer in the immuno-oncology area, and Jay Venkatesan, Managing Partner, a veteran investor in the biotechnology space. For more information on Alpine Immune Sciences, please visit www.alpineimmunesciences.com.

Kite Pharma, Inc. Forward-Looking Statements

This press release contains forward-looking statements for purposes of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The press release may, in some cases, use terms such as "predicts," "believes," "potential," "proposed," "continue," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should" or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. Forward-looking statements include statements regarding intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things: the ability to research and develop TIP™ technology and to engineer a TIP™ into CAR and TCR product candidates; the success of such product candidates and their ability to overcome the inhibitory mechanisms present in the tumor microenvironment; and the ability to advance Kite's pipeline through new technologies. Various factors may cause differences between Kite's expectations and actual results as discussed in greater detail in Kite's filings with the Securities and Exchange Commission, including without limitation in its Form 10-Q for the quarter ended June 30, 2015. Any forward-looking statements that is made in this press release speak only as of the date of this press release. Kite assumes no obligation to update the forward-looking statements whether as a result of new information, future events or otherwise, after the date of this press release.

CONTACT:

Kite Pharma:
Cynthia M. Butitta, Chief Financial Officer and Chief Operating Officer
310-824-9999

For Media: Justin Jackson
For Investor Inquiries: Lisa Burns
Burns McClellan
212-213-0006
jjackson@burnsmc.com
lburns@burnsmc.com

Alpine Immune Sciences:
For Media: Jennifer Paganelli
212-301-7225
jpaganelli@w2ogroup.com