

Kite Pharma, Inc.

KITE - BUY - Modest Incremental Data on Kite at ASH

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SECTOR: Biopharmaceuticals

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We are present at the American Society of Hematology meetings in San Francisco. Yesterday afternoon a presentation by Dr. James Kochenderfer and others from the National Cancer Institute was held. It has application to Kite Pharma (KITE, BUY, \$44.39) and may represent part of the design of their multicenter trial in B cell lymphoma, specifically DLBCL or diffuse large B cell lymphoma (20 patients per year). The Kite trial would be in relapsing or refractory DLBCL.

Kochenderfer illustrated previously published data using CD19 CARs (chimeric antigen receptors). In 21 patients treated to date, 11 have complete responses (duration of 6 to 44 months), 5 partial responses, and 2 patients with stable disease. Three patients were not able to be evaluated because two were not compliant and one died.

Importantly when patients are treated with CARs they are given doses of chemotherapy. This includes fludarabine and cyclophosphamide every day for three days. However, this ablation of T cells prior to CAR treatment does have toxicities. One consideration is to reduce the amount of chemotherapy given. Kochenderfer and others took 9 relapse or refractory patients and pretreated with reduced doses of fludarabine and cyclophosphamide. They obtained good responses with 2 complete responses, 5 partial responses, and some patients having stable progressive disease (3). Toxicities were less with no cytokine release syndrome. These results demonstrate that anti CD19 CAR T cells administered after low dose chemotherapy have significant activity against chemo-refractory DLBCL and could potentially become a standard treatment for aggressive lymphoma.

It is critical that additional data be collected from multicenter trials to validate these initial data.

On Sunday in a special scientific session noted above, Dr. Carl June and Dr. Steve Rosenberg discussed the development and amplification of ways to overcome immune tolerance to cancer through genetic engineering. Three methods were discussed including tumor infiltrating cells (TILs), chimeric antigen receptors (CARs), and T cell receptors (TCRs). The reason these technologies are being explored is because prognosis of most patients having relapsed or refractory cancer is poor in that they have tried most all available therapy but the cancer persists. Prognosis is grim. What can be done for those patients? June discussed the evolution of first and second generation CARs providing evidence of potent and durable (>4 years) responses in CLL and ALL and robust activity in DLBCL and follicular lymphoma.

Rosenberg discussed the evolution of curative treatments using adoptive cell transfer. The ideal targets for adoptive cell transfer are the unique mutations that occur in cancers. Using exome sequencing, a technique has been developed to identify any cancer mutation. A peptide is made containing the DNA encoding this tumor mutation. This construct is used to transform a T cell and as a result of the genetic engineering the new peptide having the mutation is now displayed on the T cell MHC or major histocompatibility complex. This then gives rise to reactive T cells when introduced back into the patient. This approach is being explored by Kite Pharma to expand the current reach of cancer immunotherapy to common solid tumors.

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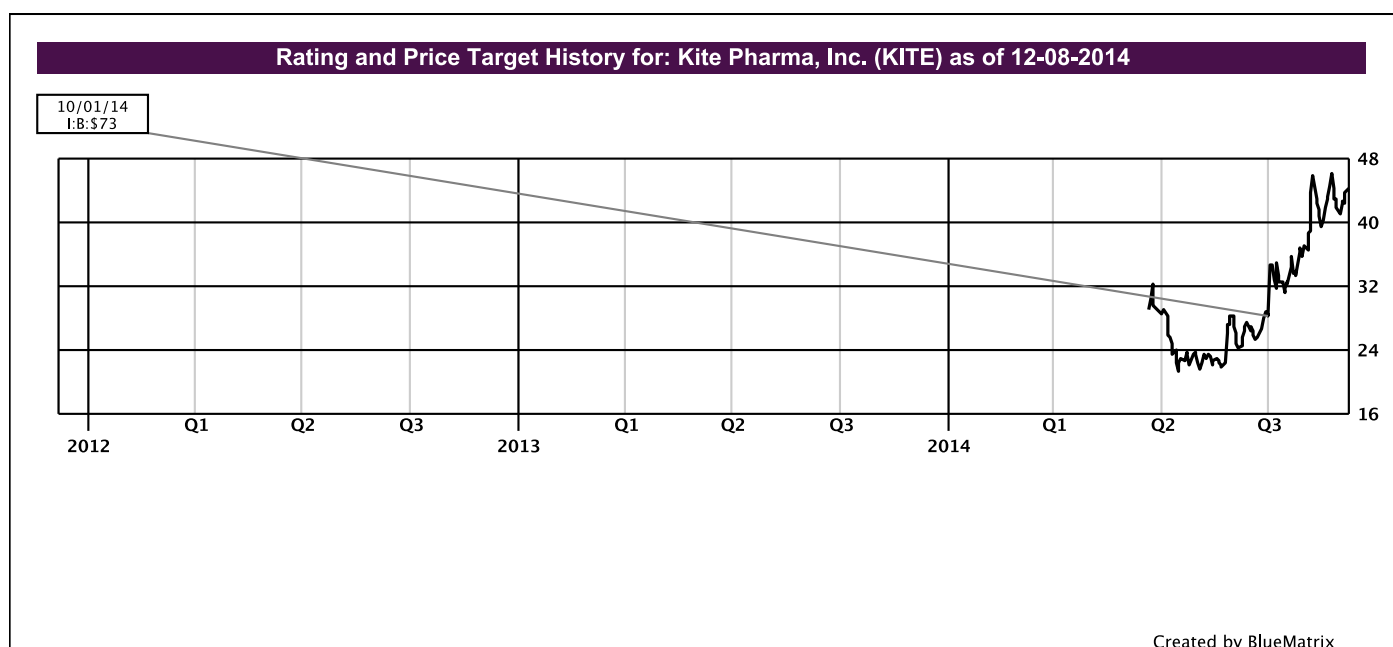
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