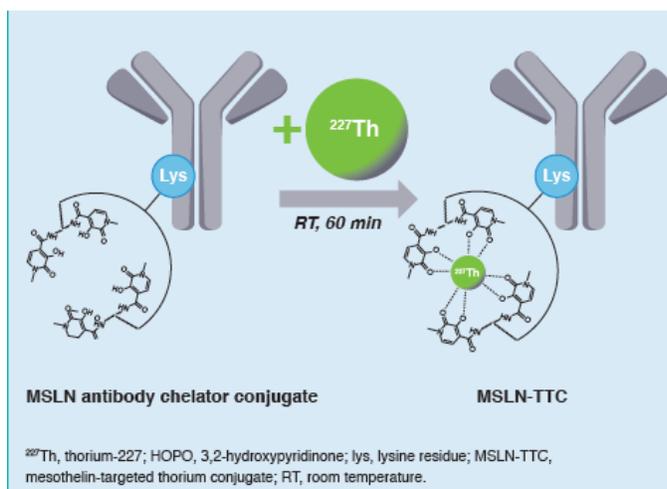


As I described in my newsletter ISSUE 28, APRIL 2013, we entered a partnership with Algeta to develop anticancer agents based on chelating ^{227}Th and connecting that complex to an antibody that targets the cancer. This agreement was further described in the press release by Algeta ASA May 2, 2013 (Thomson Reuters) which stated Algeta “..has exercised its option to take an exclusive worldwide license to patented Lumi4® bi-functional chelator technology from Lumiphore, Inc. (Richmond, CA, USA) and has extended the collaboration to include additional chelator families. These technologies are currently being developed by Algeta to conjugate thorium-227 to tumor-targeting molecules to create Targeted Thorium Conjugates (TTCs).” Progress on this development was presented by Algeta (now Bayer) in a poster presented at the American Association for Cancer Research Annual Meeting, 16–20 April 2016, New Orleans, LA. Shown at right is Figure 2 from that poster. It shows the linkage of the HOPO chelator to the antibody for mesothelin (MSLN). This protein is membrane-anchored. Overexpression of MSLN is most prominent in mesothelioma, ovarian, lung, triple-negative breast, and pancreatic cancers. Encouraging results were found in a mouse model with a cancer xenograft.



At the same meeting Dr. Alan Cuthbertson of Bayer presented a talk at a session entitled *New Drugs on the Horizon 2*: "CD22 Targeted Thorium Conjugate (TTC): A first in class alpha-pharmaceutical." This uses an antibody from Immunomedics (epratuzumab: humanised mAb targeting CD22) and the same linkage procedure shown in the figure to create a drug candidate (CD22-TTC, BAY 1862864) that targets lymphoma. After extensive cell and animal model studies, Bayer is now enrolling patients in an open-label Phase I, dose escalation study to evaluate BAY 1862864 delivered by injection in subjects with relapsed or refractory CD-22 positive non-Hodgkin's lymphoma. Dr. Cuthbertson, Head of Thorium Research at Bayer, said that one of the key elements of success is "...the chelator. The chemistry used to attach this critical component has been optimized and is now robust and reproducible, allowing us to reliably produce a wide variety of stable antibody-thorium conjugates." (The Bayer Scientific Magazine, Edition 29, November 2015, page 9) We congratulate Bayer on their progress and are excited that our joint chelate development is part of this effort.

For more information on any newsletter topics see <http://www.lumiphore.com/> .

Sincerely,



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