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Validation of a novel therapeutic target for targeted radionuclide-antibody therapy of malignant pleural effusion

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Malignant pleural effusion (MPE) is a frequent complication in patients who have a broad range of advanced cancers, including lymphomas and carcinomas of the lung, breast, gastrointestinal tract, and ovaries, and portends a worse prognosis in these cancers. Among these cancers, the most common causes for MPE is lung cancer (37.5%). Treatment of MPE consists of tube thoracostomy and intrapleural administration of sclerosing agents, including chemicals, such as talc; antibiotics, such as tetracycline, doxycycline, and minocycline; and antineoplastic agents, such as cisplatin, bleomycin, doxorubicin, and mitomycin. However, in many cases, MPE is refractory to these treatments because those therapeutic agents cannot treat the cancer cells. Therefore, we focused on searching a novel therapeutic target for developing a targeted radionuclide-antibody therapy of malignant pleural effusion metastasized from lung cancer. As a result, we selected a membrane receptor which is overexpressed on the MPE cell lines, and a chimeric-antibody binding with the receptor were prepared by using phage display technology. The antibody were radiolabeled with Lu-177, and *in vitro* & *in vivo* pharmacokinetic characteristics were evaluated. Therapeutic efficacy of the radiolabeled-chimeric antibody was also evaluated using MPE animal models.

Biography

Jaecheong Lim, a Doctor of Veterinary Medicine (PhD-DVM), is a Senior Researcher of the Radioisotope Research Division in the Korea Atomic Energy Research Institute. He is currently developing radiolabeling technologies and radiolabeled compounds for the treatment of cancers, and published more than 20 papers in related journals.

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