Monoclonal Antibodies to the Tumor-Specific Antigen, Human ROR1

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Technology description

Summary

B-cell chronic lymphocytic leukemia (B-CLL) is an incurable disease developed by more than 15,000 Americans each year and currently, there are no therapeutic monoclonal antibodies (mAbs) that specifically recognize B-CLL tumor cells. Receptor tyrosine kinase-like orphan receptor 1 (ROR1) is a constitutively expressed tumor-specific cell surface antigen and an ideal target for therapeutic antibodies.

Available for licensing are four mouse anti-human ROR1 mAbs (hybridomas designated 2A2, 2D11, 1A1, and 1A7). All four mAbs bind specifically to the extracellular domain of human ROR1 and have good potential for therapeutic development by either humanization, conversion to chimeric mouse/human antibodies, or conjugation to a radioisotope, chemical drug or bacterial toxin.

Market:

Currently, mAbs alemtuzumab® and rituximab®, which are not tumor cell-specific, are used for treating B-CLL. Rituximab® generated sales of 5.2 billion US dollars in 2007.

MAb market is estimated to be worth $30.3 billion in 2010 and it is one of the fastest growing sectors of the pharmaceutical industry with a 48.1% growth rate between 2003 and 2004.

Application area

Therapeutic antibodies against ROR1-expressing cancers like B-CLL and possibly other hematologic and solid malignancies

Research tools for the study of ROR1 in cancer biology

Advantages

Hybridomas provide a continuous source of mAb

Target extracellular domain of ROR1

Institution

NIH - National Institutes of Health

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