Docket #: S13-497

Therapeutic monoclonal antibodies for AML and other cancers

A team of Stanford researchers has developed humanized and chimeric mouse anti-human CD99 monoclonal antibodies with demonstrated activity against AML (acute myeloid leukemia) cells in vitro and in vivo. The CD99 protein is overexpressed on AML stem cells compared to normal hematopoietic stem cells. CD99 has also been found in the cell surface of Ewing's sarcoma and other solid tumors. The anti-human CD99 antibodies developed at Stanford exhibit potent efficacy in triggering phagocytosis of AML cells in vitro and eliminating AML cells in an in vivo model. Furthermore, the anti-human CD99 antibodies demonstrated synergy with other antibodies in eradicating AML in vivo. These antibodies could be developed as therapeutic agents (either alone or in combination therapy) to treat AML and other forms of cancer.

Applications

- **Therapeutic antibodies** – as a single agent or combination therapy to treat:
  - Acute myeloid leukemia (AML)
  - Ewing's sarcoma and other solid tumors that express CD99

Advantages

- **Humanized antibody** – reduces immunogenicity to mouse antibody
- **Potent efficacy** in eliminating human primary AML cells both in vitro and in vivo
- **Synergy** with other monoclonal antibodies in eradicating AML in vivo

Publications

- Issued patent in USA, France, Germany, Ireland, Italy, Spain and United Kingdom
- Published PCT Application: WO2015161267
- Published Application: 20170029524
- Issued Patent: 10,040,862 (USA)

Patents

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