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**TECHNOLOGIES AVAILABLE FOR LICENSING**

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**Novel Leukemia-associated, Relatively Short Immunogenic Peptides in Treatment of Acute Myeloid Leukemia (AML).**

The present invention provides a method of treating individuals suffering from acute myeloid leukemia (AML) by providing novel leukemia-associated, relatively short immunogenic peptides and biologically active variants that elicit an immune response. The general mechanisms of action of those peptides are:

- Stimulating a cytotoxic T-lymphocyte reaction.
- Lyses of specific leukemia cells.
- Stimulating an immune effector's cell response.
- Chemical synthesis of the proteins described in the invention by providing the sequence of the different type of peptides.

**AREAS OF APPLICATION**

- Biotechnological diagnosis and therapy of AML.
- Cancer vaccine-potential vaccines could be prophylactic or for the treatment of established cancer, and could contain a single peptide or a range of peptides that cover different or similar epitopes.

The invention provides information on the isolated peptides that could lead to kits containing isolated peptides and antibodies to those peptides, alone or in combination, which have great therapeutic potential.

**ADVANTAGES**

Immunogenic Peptides offer:

- An alternative treatment. It has been presented in numerous studies that lymphocytes can produce an anti-leukemia effect by observing the infusion of allogeneic donor lymphocytes induced complete remission in leukemia patients who relapsed after allogeneic bone marrow transplant.
- The absence of distinctive toxicity, specifically veno-occlusive disease of the liver in patients given Gemtuzumab Ozogamicin for the treatment of relapsed leukemia after hematopoietic stem cell transplantation. Gemtuzumab Ozogamicin, a calicheamicin-conjugated humanized anti-CD33 mouse monoclonal antibody recently approved by the USFDA, has been introduced to clinics as a promising drug for the treatment of relapsed CD33+ AML patients.
- The vaccine approach targeting the specific protein by infusing CD33 peptide is capable to improve the clinical outcome by avoiding the toxicity caused by drug-conjugation in Gemtuzumab Ozogamicin.

**THE TECHNOLOGY**

The stimulation of the immune system can play an important role in treating cancer, and T lymphocytes have been shown to effectively kill leukemic targets. Short peptides displaying nine to thirteen amino acids have been shown to be a part of tumor antigens capable of inducing a directed immune response. Such peptides have been described for melanoma, prostate cancer and various other cancers, and these peptides are currently used for immunotherapy purposes. The invention makes use of an antigen on leukemic cells called CD-33, which is highly expressed on a large percentage of acute myeloid leukemic cells. The invention provides a method for stimulating an immune effector cell response and pertains to effector cells and antigen presenting cells produced by these methods.

**PATENT**

U.S. Utility patent application #10/138,469, "Immunogenic Peptides" filed May 3, 2002.

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