ESA Patentverwertungsagentur
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Technology Offer

Biological for stringent and reversible suppression of T cells

Problem to be solved

Several pathological conditions as autoimmune diseases, inflammatory diseases and transplant rejection are due to an excessive T cell activity. Treatment modalities are based on the relief from symptoms, using anti-inflammatory drugs or replacement therapies. More recently, immune suppressants were getting into the focus, especially biopharmaceuticals or biologicals. The application of these engineered molecular targeted therapies, which includes antibodies and receptor blockers, is rapidly expanding, owing to the good efficacy and safety profiles. However, most of them are specific for a single disease, and only some are useful in more than one disease. No agents were developed until now, which directly and specifically suppress T cell activation, the starting point of the disease-causing processes.

Novel approach

We offer a bifunctional agent with a very stringent and highly specific control over T cell activation, which hasn't be seen by any other known substances yet (see figure). The efficacy is achieved by a very low amount of the drug and moreover, the suppression is reversible within 24 hours, when the agent is omitted. Furthermore, this invention not only relates to the inactivation of T cells in their entirety, but also the inactivation of antigene-specific T cell subgroups are conceivable. No membrane mobility characteristics of the biological have to be considered for application, because the target is located on the outside of the cell.

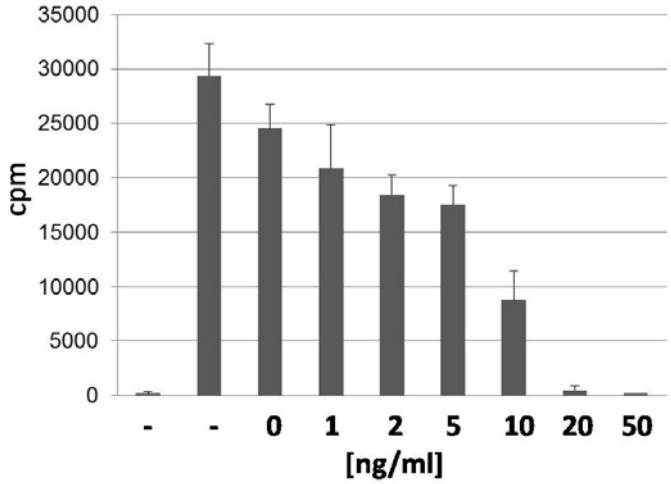

Figure:
Increasing doses of the bifunctional agent significantly suppresses and blocks the proliferation of T cells. The proliferation of activated human T cells is measured via the incorporation of exogenous radioactive thymidine. Thymidine incorporation is shown by T-cell-associated radioactivity in counts per minute (cpm).

1. column: non-activating control
2. column: one part of the bifunctional agent
3.-7. column: defined amounts of bifunctional agent, shown as final concentration in ng/ml

Application

We are seeking a cooperation partner for further development of the therapeutic application in humans and for implementation into clinical routine.

Patent situation

An EP application has been filled.

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