Licensing Opportunity

University &
University Hospital Lausanne

The PACTT is proposing an exclusive or non-exclusive license for a method to screen new compounds regulating the adaptive immune system.

Field:

- Screening method to develop new compounds for the treatment of inflammatory or autoimmune disorders or lymphomas.

Development Phase:

- Continuing *in vivo* studies.

Patent Status:

- Priority date: May 8, 2007.
- PCT/IB2008/052122 patent application, filed May 30th, 2008 on in the name of the University of Lausanne and naming as inventors M. Thome, F. Rebeaud and S. Hailfinger.
- The patent application has been extended in US and Europe

Innovative aspects:

- New assay to develop innovative compounds targeting T- and B-cell function.

Additional information is available upon request (N Ref. IDF 10/07)

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Development of new immuno-modulatory drugs

Background

Triggering of the antigen T- and B-cell receptor leads to the initiation of multiple signaling pathways that regulate cellular proliferation, survival and effector function of T- and B-cells. Deregulation of lymphocyte activation may lead to lymphomas, inflammatory or autoimmune diseases.
The inventors have shed light on the molecular function of MALT1, an enzyme downstream of the antigen receptor, controlling T- and B- cell function.

Description of the invention

The present invention provides means, such as enzyme assays or screening methods, that permit the testing or screening for compounds putatively interfering in a signaling pathway regulating T- or B-cell function. In addition with the identification of the protein BCL10 as a MALT1 substrate, MALT1 activity can now be monitored by assessing BCL10 cleavage, which can be used for the immunohistochemical diagnosis of lymphoma biopsies of the ABC, GCB or PMBL subtype (only the ABC subtype shows constitutive MALT1 activity).

Proof of concept

The inventors identified MALT1 proteolytic activity and described that MALT1 inhibition in lymphocytes results in impaired antigen receptor-induced activation of the transcription factor NF-kB and, as a consequence, impaired proliferation and cytokine production.
Moreover, the inventors have demonstrated constitutive activity of MALT1 in cell lines derived from a subtype of diffuse large B-cell lymphoma, suggesting that the newly identified MALT1 enzymatic activity is implicated in the development of this disease.

Applications and competitive advantage

Therapeutic targeting of the protease activity of MALT1 may be a useful approach for the treatment of autoimmune or inflammatory diseases, for the prevention of transplant rejection and the treatment of lymphomas. It may lead to the development of an innovative drug, targeting a newly identified key pathway controlling lymphocyte function.

References

"Essential role of Malt1 protease activity in activated B Cell-like diffuse large B-cell lymphoma", PNAS, 106, 19946-19951