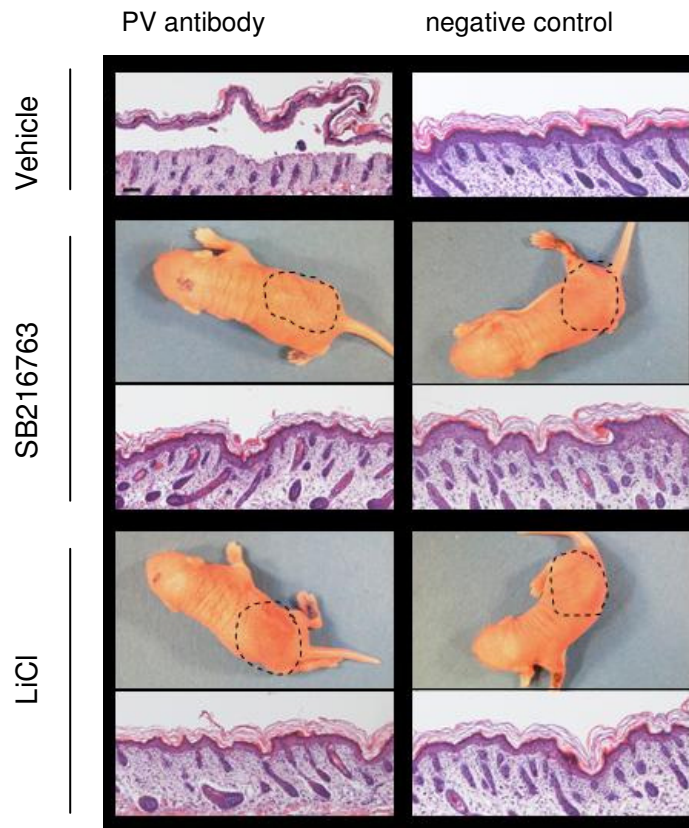


## Treatment and prevention of Pemphigus vulgaris using blockers of glycogen synthase kinase 3 (GSK3)

A new way of treating and preventing Pemphigus vulgaris (PV) by administering a GSK3 blocker is described. In addition, such GSK3 blockers may be used in the manufacture of medicaments for preventing and treating PV and also to develop a screening method to discover further compounds that are effective in the prevention and treatment of PV.

- Keyword** Pemphigus vulgaris, PV, GSK3, GSK3 $\beta$ , Dsg3, desmoglein 3; plakoglobin
- Inventor** Eliane Müller, Lina Williamson
- Reference** L. Williamson, N. A. Raess, R. Caldelari, A. Zakher, A. de Bruin, H. Posthaus, R. Bolli, T. Hunziker, M. M. Suter, E.J. Müller. Pemphigus vulgaris identifies Plakoglobin as key suppressor of c-Myc in the skin. EMBO J., 25, 3298–3309, 2006.
- Background** Pemphigus vulgaris, or commonly referred to as "PV", is an auto-immune blistering disorder of the skin and mucous membranes in man and domestic animals where those afflicted suffer from burn-like lesions all over their bodies. The sores may never heal in some cases or may not heal for extended periods of time. Some patients can coexist with the disease for years, while others will die a slow and complicated death. At the present time, there is no cure nor specific treatment- only treatments to reduce antibody production in general to lessen the effects of the disease and allow some patients to lead more productive lives. Those treatments center on the use of chemotherapeutic immuno-suppressive drugs.
- Invention** The completely novel insight into the signaling pathways involved in PV pathogenesis revealed that GSK3 inhibitors prevent blister formation in the neonatal PV mouse model. Thus the use of such blockers can be useful to prevent and treat PV more specifically than previously possible. In addition, the blocker may be used for the manufacture of medicaments to treat or prevent PV. The preferred blockers are those which are selective for GSK3 $\beta$ , i.e. which selectively reduce enzyme activity of GSK3 $\beta$  but not to a reasonable extent of GSK3 $\alpha$ .

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**Figure** Blister formation in neonatal mice is prevented by pre-injecting the mice with GSK3 inhibitors (LiCl, SB216763)

**Use** oral and topical pharmaceutical preparations, screening for compounds effective in the treatment of PV

**Patent Status** Patent application filed

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