



Novel long-acting ophthalmology drugs

Back of the eye disorders are not accessible by systemic drugs and require intravitreal (IVT) injection. Drugs directly injected into the eye often suffer from a fast clearance and require frequent injection, which is a burden to patients and physicians. While a correlation between intravitreal half-life and macromolecular size has been shown with PEGylated proteins, PEG is also known to activate the complement in the eye.

PASylation®, a biological alternative to PEGylation, is a superior technology to design intravitreal long-acting drugs to treat back of the eye diseases and to improve patient's quality of life. The hydrated, disordered PAS polypeptide chain adopts an expanded hydrodynamic volume and strongly increases the intravitreal half-life of the therapeutic. There is no need for a potential inflammatory Fc-part. Furthermore, PAS fusion proteins can be produced in a cheap way, at high yield using industry-leading expression technology platforms. In addition, PAS can be utilized as a linker to generate innovative 3rd generation biologics with bi- or multispecificity.

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| <p>✓ Expanded hydrodynamic volume</p> <ul style="list-style-type: none">• Slow vitreal clearance• Reduced injection frequencies | <p>✓ No Fc region:</p> <ul style="list-style-type: none">• No inflammatory mediator• No complement activation• Excellent patient compliance |
| <p>✓ Genetic PAS fusion enables:</p> <ul style="list-style-type: none">• Creation of bi-/multispecifics• Cheap manufacturing• Homogenous product | <p>✓ PAS polypeptides characteristics:</p> <ul style="list-style-type: none">• Non-toxic• Biodegradable• Excellent tolerance |

Related Publications & Press releases:



Eskandarpour M. et al. (2021) Leukotriene B 4 and Its Receptor in Experimental Autoimmune Uveitis and in Human Retinal Tissues: Clinical Severity and LTB 4 Dependence of Retinal Th17 Cells. Am. J. Pathol. 191, 320-334.



Eskandarpour M. et al. (2021) Immune-Mediated Retinal Vasculitis in Posterior Uveitis and Experimental Models: The Leukotriene (LT)B4-VEGF Axis. Cells 10, 396.



NEW YORK and LONDON, Feb. 25, 2021 (GLOBE NEWSWIRE): Akari Therapeutics Presents New Preclinical Data Highlighting Potential of Long-Acting PASylated Nomicopan to Treat Retinal Diseases, Including Age-Related Macular Degeneration (AMD) and Uveitis

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