

KBHB GmbH, customizing protein production levels for BioMedicine, BioCosmetics & Biotechnology



Time has come to customize protein synthesis for benefits in health, the prevention and treatment of disease as well as for biotechnological production. Nature uses ribosomes to translate mRNAs (genetic blueprints) into proteins. All ribosomes are made from a scaffold of ribosomal RNA and a set of ribosomal proteins, which fine-tune protein synthesis. Individual ribosomal proteins can be modified (quantitatively, qualitatively, by small molecule intervention), generating “specialized” ribosomes to preferably increase or decrease production levels of a protein of interest within a physiological range, while leaving bulk protein synthesis unaltered.

Riboscreen® Technology

In order to customize the protein production level of any protein, KBHB first screens for a ribosomal protein devoted to modulate production levels of the protein of interest, and then targets this ribosomal protein *in situ* with small molecules for systemic intervention.

Pilot study

Customized protein synthesis for systemic therapy in rare disease

Junctional epidermolysis bullosa (JEB) is an early lethal form of the rare blistering skin disease epidermolysis bullosa (EB). Here, the skin anchor protein Lamb3 is produced at insufficient levels, leaving patients with large external and internal wounds. At present, there is no therapy. Riboscreen® technology has identified ribosomal protein L35 and two small molecule ligands, Artesunate and Atazanavir, which in a human JEB cell model have shown to boost production levels of Lamb3. A named person trial is scheduled for this first-in-kind therapeutic intervention

Proof of concept

In an ongoing project with an industry partner, KBHB has identified another pair of ribosomal protein target and small molecule ligands. Treatment is able to favorably boost protein production levels of a skin protein conferring structural integrity to the skin, functional loss of which during aging contributes to the phenotype of aging skin.

What can we do for YOU?

Is there a protein, the production level of which you want to increase or decrease while leaving bulk protein expression unaltered? For example, one of the undruggable cancer proteins? We do not drug the protein, we drug the production level! Or are you interested in boosting protective proteins that halt the aging process? Or do you want to boost biotechnological production levels of proteins? KBHB will deliver a ribosomal protein target and small molecule ligands, plus a functional verification of the treatment in our model systems.

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