**LB716**

Justacrine stimulation of keratinocytes by ultraviolet B (UVB)-exposed melanocytes through the sPmel17-FHL2-TGFβ1 axis

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The interest in understanding the mechanisms of skin aging is growing within the cosmetic field. Aging occurs within the skin cells naturally or prematurely when the cells encounter harmful oxidative stresses such as UV light or pollution. Stressors incite a build-up of reactive oxygen species within cells leading to a senesced phenotype. These senesced cells no longer divide, but still maintain a level of cellular respiration, indicating that the cells maintain activity. Senesced cells induce neighboring proliferating cells into a senesced phenotype by secreting cellular signals in a senescence-associated secretory phenotype (SASP), impairing the proliferating cells from dividing. Identifying actives that target senesced cells is important to increase the understanding in the skin aging process. A high throughput strategy using plasmid-encoded reporter systems and high-throughput screening model was developed to identify actives. Using tert-butyl hydroperoxide (t-BHP) SIPS was induced in primary fibroblast. Proliferation, death, and senescence was determined using live cell imaging probes, analyzed via Variskan Lux plate reader. SASP was determined using reporter assays for IL-6, IL-1α and TNFα. Within the SIPS model, t-BHP induced senescence and attenuated proliferation. Furthermore, 1-BHP did not induce cell death in the SIPS model. This data supports that t-BHP induced senescence by inhibiting proliferation and not by inducing cell death, creating a senescent model. Additionally, the increase in SASP of the SIPS model at 120hrs further supports the senescence phenotype. Exploiting this high throughput SIPS screening model to identify new actives that target a senesced population will increase our understanding in the skin aging process.

**LB717**

Dipeptide diaminobutyrol benzylamide diacetate postsynaptically inhibits muscle contraction

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Lipid biochemistry and periorbital aging: Skin cell response to micromovements and their duration

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Peripheral skin is more vulnerable than the surrounding facial skin since it is much thinner and not have the same appendages as the rest of the face. Among the characteristic of periorbital skin is that it is under constant movement due to daily blinking, and facial expressions including smiling, laughing and crying. As a result, periorbital skin cells are under constant change of mechanical stress and that using a combination of actives that promote synchronization and miR-146a levels in skin cells and that technologies addressing both can support natural collagen production and help skin cells resist aging.

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**ABSTRACTS**

**Cell-Cell Interactions in the Skin**

**LB718**

Screening method for natural actives in a SIPS fibroblast model

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**LB719**

Cytokine profiling in low- and high-density small extracellular vesicles from epidermoid carcinoma cells

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Exosomes or small extracellular vesicles (sEVs) are membrane-bound, nanoparticles carrying various macromolecules, acting as autocrine and paracrine signaling messengers. Here, sEVs from epidermoid carcinoma cells influenced by membrane presentation of the glycoprotein desmoglein 2 and its palmitolation state were investigated. sEVs were isolated by sequential ultracentrifugation followed by iodixanol density gradient separation and subjected to multiplex cytokine profiling. Subpopulations of different densities showed active sorting of surface proteins, cytokines and growth factors. This comprehensive analysis of the cytokine production profile by A431 cell sEVs highlights their contribution to immune evasion, pro-oncogenic and angiogenic activity and the potential to identify diagnostic disease biomarkers.

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**LB720**

Mechanobiology and periorbital aging: Skin cell response to micromovements and their duration

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**LB721**

miR-146a, circadian rhythm and impact on collagen K Stahl, K Dong, D Layman, K Corralis, J Triviero, W Eagle, E Goyardet and N Pernodet

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MicroRNAs (miRs) are small, non-coding RNAs that function as critical signaling molecules, which can negatively or positively impact cellular health. Even though miRNA biology is a relatively new field of study, hundreds of miRNAs have been identified to date. Expression of these molecules is highly tissue-specific, emphasizing the importance of studying their function within the tissue or cells of interest. In our research on skin cells, we have identified a specific miR involved in skin anti-aging activities: miR-146a. miR-146a was proven not only to help against inflammation but also help to support cell number and production of proteins, such as collagen. miR-146a has also been linked to circadian rhythm and we had shown previously that skin cell synchronization is essential for skin repair and recovery. Unfortunately, as we age, skin naturally becomes desynchronized from the circadian rhythm and expression of miR-146a decreases in dermal fibroblasts. Here, we show that collagen type I synthesis is impaired in cells cultured in an artificial circadian rhythm, and that using a combination of actives that promote synchronization and miR-146a levels in skin cells help to increase collagen level in aging skin cells. We believe this is the first demonstration of the critical importance of miR-146a and collagen temporal expression level in skin cells and that technologies addressing both can support natural collagen production and help skin cells resist aging.