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## RESEARCH AREA

Trillions of bacteria, fungi and viruses colonize the skin surface, collectively comprising the skin microbiome. There is a continous interaction in between the microbas and the different cells in the skin. Recent data suggest, that the skin commensal bacteria play an important role in providing a protection against more harmful bacteria, and in the regulation of skin immune system. Commensal bacteria can activate the different cells in the skin to produce inflammatory mediators. However, it is not known, how the skin cells can differentiate in between commensal and pathogenic bacterias? How do we tolerate the great number of bacteria without inducing inflammation in the skin? In special circumstances, the commensal flora has been suggested to play a role in the induction or in the maintenace of chronic inflammatory skin diseases, such as acne, rosacea or psoriasis. Important member of the skin's commensal flora is the bacterium called *Propionibacterium acnes (P. acnes)*. Even though it resides in the pilosebaceous unit of the skin, under certain circumstances it may also play an important role in the pathogenesis of acne, the most common inflammatory skin disease. We investigate how and when this commensal microbe turns pathogenic and how this bacterium influences the skin immune system.

## TECHNIQUES AVAILABLE IN THE LAB

Various cell separation techniques, cell culturing methods, flow cytometry, immune-staining techniques of tissues and cells, protein, mRNS detection, cell cycle analysis, cell proliferation measurements.

## SELECTED PUBLICATIONS

Buzas, K., Marton, A., Vizler, C., Gyukity-Sebestyen, E., Harmati, M., Nagy, K., Zvara, A., Katona, R.L., Tubak, V., Endresz, V., Németh, I., Olah, J., Vigh, L., Biro, T., **Kemeny, L.** (2016) Bacterial sepsis increases survival in metastatic melanoma: Chlamydophila pneumoniae induces macrophage polarization and tumor regression. **J Invest Dermatol 136:** 862-865.

Tax, G., Urbán, E., Palotás, Zs., **Kemény, L.**, Szabó, K. (2016) Propionic acid produced by Propionibacterium acnes strains contribute to their pathogenicity. **Acta Derm Venereol 93:** 43-49.

Manczinger, M., **Kemény, L.** (2013) Novel factors in the pathogenesis of psoriasis and potential drug candidates are found with systems biology approach. **Plos One 8:** e80751.

Szabó, K., **Kemény, L.** (2011) Studying the genetic predisposing factors in the pathogenesis of acne vulgaris. **Human Immunol 72:** 766–773.

Kinyó, A., Kiss-László, Z., Hambalkó, S., Bebes, A., Kiss, M., Széll, M., Bata-Csörgő, Z., Nagy, F., **Kemény, L.** (2010) COP1 contributes to UVB-induced signaling in human keratinocytes. **J Invest Dermatol 130:** 541–545.