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III ENCONTRO DE  
BIOTECNOLOGIA  
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I IBERIAN CONGRESS ON  
MEDICINAL  
BIOTECHNOLOGY

BOOK OF ABSTRACTS



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## Dual-action peptides as potential novel topical agents for treatment of skin and soft tissue infections

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Chronic skin and soft-tissue infections (SSTI) such as diabetic foot ulcers (DFU) exhibit signs and symptoms that are consistent with localized bacterial biofilms that contribute to tissue destruction, delayed wound-healing and other serious complications. As such, most current approaches for advanced wound care aim at providing antimicrobial protection to the open wound together with a matrix scaffold (often collagen-based) to boost reestablishment of the skin tissue. While efficient production of recombinant human collagen remains an unmet goal, an alternative sensible option may be the design of formulations containing collagen-boosting instead of collagen-like components. Actually, collagen-boosting peptides, e.g., Matrikines®, are already used in cosmetics to promote extracellular matrix production, rebuilding structure and restoring all functions of healthy skin. Additionally, many antimicrobial peptides (AMP) can also act as wound-healing peptides, thus displaying the dual antimicrobial and tissue-regenerating properties highly desired in novel topical agents for treatment of SSTI. With the increasing prevalence of multi-drug resistant bacteria, and considering the burden that DFU alone represents to human health and healthcare facilities, the development of novel topical agents for effective treatment for this and other severe SSTI is an urgent need.

In view of the above, our group has recently started a research project focused on the chemical synthesis, in vitro and in vivo evaluation of conjugates where collagen-boosting peptides, like KTTKS (Matrixyl®), are linked to AMPs aiming at dual-action peptides with potential interest as topical agents for the treatment of SSTI. Preliminary results thus far obtained will be communicated.

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