Accelerated skin wound healing by selective 11βš-Hydroxylase (CYP11B1) inhibitors

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4493597
Author(s) Emmerich, Juliette; van Koppen, Chris J.; Burkhart, Jens L.; Engeli, Roger T.; Hu, Qingzhong; Odermatt, Alex; Hartmann, Rolf W.
Author(s) at UniBasel Odermatt, Alex ;
Year 2018
Title Accelerated skin wound healing by selective 11βš-Hydroxylase (CYP11B1) inhibitors
Journal European journal of medicinal chemistry
Volume 143
Pages / **Article-Number** 591-597
Mesh terms Dose-Response Relationship, Drug; Enzyme Inhibitors, chemical synthesis, chemistry, pharmacology; Humans; Molecular Structure; Pyridines, chemical synthesis, chemistry, pharmacology; Skin, drug effects; Steroid 11-beta-Hydroxylase, antagonists & inhibitors, metabolism; Structure-Activity Relationship; Wound Healing, drug effects
Previous studies have shown that inhibition of cortisol biosynthesis in skin leads to accelerated wound healing. Here, pyridylmethyl pyridine type 11β-hydroxylase (CYP11B1) inhibitors were optimized for topical application to avoid systemic side effects. The resulting very potent, non-toxic CYP11B1 inhibitor 14 (IC; 50; =ă0.8ănM) exhibited good selectivity over 11β-HSD1, CYP17A1 and CYP19A1. The compound showed high stability toward human plasma (t; 1/2; =ă>ă150ămin, as a substitute for wound fluid) and low stability toward HLS9 (t; 1/2; =ă19ămin) for rapid metabolic clearance after absorption. Compound 14 was able to accelerate wound healing in human skin.
ISSN/ISBN 1768-3254
edoc-URL https://edoc.unibas.ch/68084/
Full Text on edoc No;
Digital Object Identifier DOI 10.1016/j.ejmech.2017.11.018
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/29207342
Document type (ISI) Journal Article