

## Medical > In Vivo > Small animal research

# 5

### Real Time Reflectance Confocal Microscopy, A Non Invasive Tool for In Vivo Quantitative Evaluation of Comedolysis in the Rhino Mouse Model

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#### ABSTRACT

**BACKGROUND:** Near-infrared reflectance confocal microscopy (RCM) is a noninvasive tool that provides real-time images of thin virtual horizontal tissue sections.

**AIMS/METHODS:** We have used a rhino mouse model in combination with topical application of all-trans-retinoic acid and all-trans-retinol to investigate the usefulness of RCM as a noninvasive imaging tool to evaluate comedolysis in vivo and over time. Optical images were correlated with routine histology. Results: Our results demonstrate that RCM in vivo can visualize the process of transformation of utriculi (pseudocomedones) towards a normal-appearing follicular structure during retinoid treatment. The retinoic acid intervention group showed a dose-related response, while the vehicle-treated group did not show utricular changes.

**CONCLUSIONS:** RCM represents a useful tool for in vivo morphological and quantitative evaluation of skin utriculi over time and could be used as an adjunct tool to histopathological techniques for comedolysis studies.