## Medical > Ex Vivo > Non-Melanoma Skin Cancer

# 5 | Detection of oral squamous cell carcinoma with ex vivo fluorescence confocal microscopy: Sensitivity and specificity compared to histopathology

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**ABSTRACT**

Real-time microscopic imaging of freshly excised tissue enables a rapid bedside-pathology. A possible application of interest is the detection of oral squamous cell carcinomas (OSCCs). The aim of this study was to analyze the sensitivity and specificity of ex vivo fluorescence confocal microscopy (FCM) for OSCCs and to compare confocal images visually and qualitatively with gold standard histopathology. Two hundred eighty ex vivo FCM images were prospectively collected and evaluated immediately after excision. Every confocal image was blindly assessed for the presence or absence of malignancy by two clinicians and one pathologist. The results were compared with conventional histopathology with hematoxylin and eosin staining. OSCCs were detected with a very high sensitivity of 0.991, specificity of 0.9527, positive predictive value of 0.9322 and negative predictive value of 0.9938. The results demonstrate the potential of ex vivo FCM in fresh tissue for rapid real-time surgical pathology.
Keywords: fluorescence confocal microscopy; oral cancer; oral squamous cell carcinoma; rapid pathology. 