

# Skin, Cancer and Proteinases (SkinCaP)

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### *Doctoral candidates:*

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## Description of the scientific aims

In this project our aim is to identify new molecular mechanisms involved in progression of cutaneous squamous cell carcinoma (cSCC), the most common metastatic skin cancer. We have recently identified a number of novel genes and non-coding RNAs specifically expressed in human cSCCs but in normal keratinocytes. We will characterize the functional role of these genes in progression of cSCC and validate them as biomarkers for growth and metastasis of cSCC. Another goal of the project is to elucidate the role and regulation of proteinases in tissue repair and fibrosis.

## Selected publications 2010-

1. Riihilä P, Nissinen L, Farshchian M, Kivisaari A, Ala-aho R, Kallajoki M, Grénman R, Meri S, Peltonen S, Peltonen J, Kähäri VM. Complement factor I promotes progression of cutaneous squamous cell carcinoma. *J Invest Dermatol*, 135(2):579-88, 2015.
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3. Toriseva M, Laato M, Carpén O, Ruohonen ST, Savontaus E, Inada M, Krane SM, Kähäri VM. MMP-13 regulates growth of wound granulation tissue and modulates gene expression signatures involved in inflammation, proteolysis, and cell viability. *PLoS One*, 7(8):e42596, 2012.
4. Farshchian M, Kivisaari A, Ala-aho R, Riihilä P, Kallajoki M, Grénman R, Peltonen J, Pihlajaniemi T, Heljasvaara R, Kähäri VM. Serpin peptidase inhibitor clade A member 1 (SerpinA1) is a novel biomarker for progression of cutaneous squamous cell carcinoma. *Am J Pathol*, 179(3):1110-9, 2011.
5. Stokes A, Joutsa J, Ala-aho R, Pitchers M, Pennington CJ, Martin C, Premachandra DJ, Okada Y, Peltonen J, Grénman R, James HA, Edwards DR, Kähäri VM. Expression profiles and clinical correlations of degradome components in the tumor microenvironment of head and neck squamous cell carcinoma. *Clin Cancer Res*, 16(7):2022-35, 2010.