Careers in Academia

Ellie Smart
PhD Student
University of Manchester
Who am I?

• 2010-2014 BSc Biomedical Sciences, University of Edinburgh

• 2014-2015 MScR Biomedical Sciences, University of Edinburgh

• 2015-now PhD in Medicine at University of Manchester
A day in the life – in the lab
A day in the life - analysis
Managing a research project

A technique for more precise distinction between catagen and telogen human hair follicles ex vivo

To the Editor: Identifying human anagen hair follicles (HF) ex vivo is readily accomplished by stereomicroscopic analysis. However, so reliably distinguishing other hair cycle stages, namely late catagen and telogen, by stereomicroscopic analysis alone is difficult, and the gold standard remains histologic analysis, which obviously precludes their use for ex vivo culture.2 In this study, we sought to determine whether methylene blue, a staining that can be applied to living cells, helps to distinguish late catagen from telogen HF ex vivo for in vivo clinical studies. We examined transitional histologic strides in these poorly understood, but clinically important, human hair cycle stages.

Using follicular unit hair transplantation methodology (by grouping follicular units on the basis of the number of HF they contain), we recorded the number of anagen, catagen, and telogen follicles found in 800 follicular units from 8 white male patients (200 follicular units/patient) undergoing a standardized follicular unit extraction hair transplant procedure, with informed patient consent. Because anagen HF follicles are easily identifiable, only those telogen HF have been overestimated and suggest we should question the accepted standard percentages (80%-90% anagen, 10%-20% telogen, and 1%-5% catagen) in the literature, which were based on transitional histologic sections and photomicrographs, neither of which can definitively distinguish between late catagen and telogen HF. Although, in our study, the HF were from patients with androgenetic alopecia (AGA) and the ratio of anagen:catagen:telogen might differ from patients with AGA, we believe that our data are unlikely to reflect sampling bias, as HF were harvested from occipital scalp, generally unaffected by AGA. We propose that hair cycle distribution in healthy human scalp needs a more systematic re-evaluation, including comparative studies with histologic sections. This is important when assessing candidate hair growth–modulating agents, considering mirror shifts in the percentage of telogen or catagen HF can result in major changes in the degree of visible effluvium.

Irene Hernandez, PhD, MD,
Christopher Plott, PhD,
Jonathas Mendonca, PhD,
Jonas Rask, MD,
Enrique Pohlen, MD,
Maria Bertalot, PhD,
Ralf Paus, MD,
and Francisco Jimenez, MD

Chemotherapy drugs cyclophosphamide, cisplatin and doxorubicin induce germ cell loss in an in vitro model of the prepubertal testis

Erika Smart, PhD, Federica Lopez, PhD, Joibian Rice, PhD, Boglarka Nagy, PhD, Richard A. Anderson, PhD, Rod F. Mitchell, PhD and Norah Spreafico, PhD

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Opportunities - Travel

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Opportunities – Placements
Challenges
Challenges
What do you need?

• Enthusiasm
• Resilience
• Independence
• Communication