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# Stress Hormones

Produced for the CRC for Premium Quality Wool undergraduate program by;  
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# ACTH (adrenocorticotrophic hormone)

- Stimulates release of steroids from adrenal cortex
  - Glucocorticoids
    - affect interleukins (immune system)
      - act on adrenal axis to modulate action
      - coordinates a stress response
    - cortisol
      - long term adaptation to stress

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# ACTH in the Skin

- **POMC (proopiomelanocortin)**
  - 241 amino acids
  - cleaves to give ACTH
    - beta-endorphin (analgesia)
    - $\alpha$ -melanocyte stimulating hormone ( $\alpha$ -MSH)
  - present in ORS, epidermis, pilary canal and sebaceous glands
  - role in immunity or wound healing
- **Follicle has own stress axis?**

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# Follicles plus $\beta$ -endorphin

- $\beta$ -endorphins stimulate cells around dermal papilla to divide excessively
  - may trigger release of growth factors to cause hypertrophy
  - induces direct response in follicle

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