Stress Hormones

Produced for the CRC for Premium Quality Wool undergraduate program by;
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ACTH (adrenocorticotropic 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
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?
Follicles plus β-endorphin

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