

EVOLUTION OF SWEATING IN HUMANS

Homo sapiens and chimpanzees have very similar genomes. It is commonly believed that their differences mainly depend on the expression of their genes.

A recent article in [PNAS](#) provides a paradigmatic example. Endurance running is a peculiarity of Homo sapiens compared to all other primates and has played an important role in its evolution. This characteristic mainly depends on a very efficient human thermoregulatory sweating, because of a very high density of water-secreting eccrine sweat glands (about 10 times more than in chimpanzees). Studies in mice have indicated the Engrailed 1 gene (EN1) as responsible for seeding the sweat glands. The PNAS paper now reveals that enhanced expression of this gene depends on the regulatory element hECE18, which has accumulated mutations during the evolution of Homo sapiens.