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By: Stefan Anitei, Science Editor

Why Do Asians Have Thicker Hair Fibers?

The EDAR gene



Being bald or boasting a "leonine mane", having straight or curled hair, blond or black... it's all in the genes. And while you're admiring the silky hair of the East Asian girls, you should know one fact: their hair fibers are 30% larger than those of Africans and 50% than those of the Europeans. A new research presented last week at the annual meeting of the American Society of Human Genetics has unveiled the mystery: a sole genetic variant. Japanese, Thai, and Indonesian teams of geneticists have employed the International HapMap Project to solve the puzzle. The investigation started with 170 candidate genes, connected by various researches made in mice and genetic human conditions to hair development. The researchers compared the variations in these genes amongst three HapMap populations: Yoruba from Nigeria, Europeans, and Japanese and Chinese. A mutation in the gene named EDAR was found in 88% of the Japanese and Chinese, but lacked in the other two races. To understand how this gene could have been involved in hair thickness, the scientists compared hair fiber width and the gene's pattern in 186 subjects coming from two ethnic groups in Southeast Asia who displayed a large array of hair patterns. The thickest hair fibers were connected to the presence of the genome of two copies of EDAR. The EDAR gene encodes for the ectodysplasin A receptor, involved in the molecular pathway that spur hair precursor cells to start developing a follicle. "The variant may have been selected for in East Asians either because thicker hair was beneficial in the cold north Asian climate or because it is linked to some other trait, such as tooth shape, that gave East Asians an advantage," said co-author Akihiro Fujimoto of the University of Tokyo. "The EDAR allele wouldn't be all that useful for figuring out what someone looks like from their DNA because it doesn't determine whether hair is straight or curly, and hair thickness also varies with sex and age. However, it could be used as a marker for East Asian ancestry.", said co-author Ryosuke Kimura of Tokai University School of Medicine in Kanagawa, Japan. "Indeed, the EDAR allele had already jumped out in the HapMap analysis as being distinctly East Asian", said molecular anthropologist Mark Shriver of Pennsylvania State University in State College.