UM DERM RESEARCHERS IDENTIFY PSORIASIS SUSCEPTIBILITY GENE

U-M Dermatology's Psoriasis Genetics Research Program, has identified a gene called PSORS1 that plays a role in determining who gets psoriasis. The research team, looked closely at genetic samples from 678 families in which some of the family members had early-onset psoriasis, and they identified a specific gene allele as the one that confers susceptibility to this form of the skin disease.

An allele is an alternate form (or spelling) of a gene. A person inherits a copy of a gene from each parent; sometimes the genes have the same spelling in their genetic code, but usually one gene in the pair has a slightly different spelling, giving most people two alleles of a gene. The allele HLA-Cw6, with a certain spelling in its code, is the one that renders individuals susceptible to psoriasis, according to team leader Dr. J.T. Elder, MD, PhD.

Previous research had suggested that a susceptibility gene might be found in a certain region of the major histocompatibility complex, a family of many genes that play a role in the immune response. Dr. Elder and his colleagues around the country and in Germany extensively studied the haplotypes in that region. (A haplotype is a set of alleles on different genes which are usually inherited together.) They discovered that in all the families they studied, all haplotypes containing HLA-Cw6 alleles, and only those haplotypes, were associated with psoriasis.

Having the HLA-Cw6 allele does not necessarily mean an individual will get psoriasis. There are other genes as yet unidentified which likely play a role. And environmental factors -like bacterial infections- play a part, triggering the onset of the disease in people who are susceptible. The benefit to finding a gene that makes people susceptible is that scientists may be able to target just that gene to interfere with the disease. Current treatments for psoriasis often suppress the immune system, leaving the person vulnerable to various infections. Ideally, treatments aimed at a particular gene would shut down only the process which causes the disease, providing relief from the psoriasis, and still leave a functioning immune system.

Psoriasis is an autoimmune disease in which newly forming skin cells rise to the surface of the skin before they have a chance to mature. These cells piling up on the surface of the skin result in patches of thick, inflamed skin often covered with silvery scales. These patches, called plaques, normally itch and feel sore.

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For additional information refer to Nair RP, et al., Sequence and haplotype analysis supports HLA-C as the psoriasis susceptibility 1 gene. American Journal of Human Genetics 2006; vol. 78: pp. 827-851.