

☆ HIV resistance (Samson, 1996)

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Nature

Infection

STUDY SUMMARY

Identification of a common genetic variant that confers HIV resistance.

STUDY DESCRIPTION


The human immunodeficiency virus (HIV) destroys the immune system by killing white blood cells that are needed to fight infection. This disease is called acquired immunodeficiency syndrome (AIDS). CCR5 is a protein on the surface of white blood cells, that is bound by HIV and used to enter the cells. This study looked at the CCR5 gene in over 1400 individuals of European ancestry to find genetic variants that can be linked to the risk of HIV infection. The study discovered that a relatively common variant (a deletion of 32 bases) confers almost full resistance to HIV infection if present in both copies of the CCR5 gene. A CCR5 protein that harbors this variant apparently cannot be efficiently used by HIV to enter white blood cells.

DID YOU KNOW?

While the genetic variant in the CCR5 gene that confers HIV resistance is relatively common in individuals of European ancestry, it's not found in individuals of African ancestry.

YOUR DETAILED RESULTS

The variants highlighted in green have **positive effect sizes** and increase your genetic predisposition to increased HIV resistance. The variants highlighted in blue have **negative effect sizes** and decrease your genetic predisposition to increased HIV resistance. Variants that are not highlighted are not found in your genome and do not affect your genetic predisposition to increased HIV resistance. However, please note that genetic predispositions do not account for important non-genetic factors like lifestyle. Furthermore, the genetics of most traits has not been fully understood yet and many associations between traits and genetic variants remain unknown. For additional explanations, click on the column titles in the table below and visit our [Nebula Library tutorial](#).

| VARIANT [ⓘ] | YOUR GENOTYPE [ⓘ] | COMMENTS | EFFECT SIZE [ⓘ] | VARIANT FREQUENCY [ⓘ] | SIGNIFICANCE [ⓘ] |
|--|--|---|--------------------------|--------------------------------|---------------------------|
| rs333_T or DEL  | ACAGTCAGTATCAATTCTGGAAGAAT TTCCAGACA / ACAGTCAGTATCAATTCTGGAAGAAT TTCCAGACA | Homozygous CCR5-delta32 deletion (T/T or /) confers full resistance to HIV infection. Heterozygous deletion confers only slightly increased resistance. | 99.00 (-) | 7% | 1.00×10^{-99} |