

# Beginner's Guide: Agouti locus



The most common rat color is Agouti, also known as the wildtype color.

The Agouti gene is given the letter "A" and this is the dominant gene on the Agouti locus.

The second allele on the Agouti locus is "a" which is known as the non-agouti allele and this allele is recessive.

When a rat possesses the dominant "A" we will see a Agouti based color. When a rat possesses **two** of the recessive "a" we will see a non-agouti based color.

The Agouti locus is the foundation for all rat colors known. A rat can either be Agouti based or non-agouti based.

The Agouti allele causes the hairs to be ticked meaning the hairs are divided into 3 bands. The base of the hair is grey, the middle will be fawn to beige in tone, while the tip will reflect the base color.

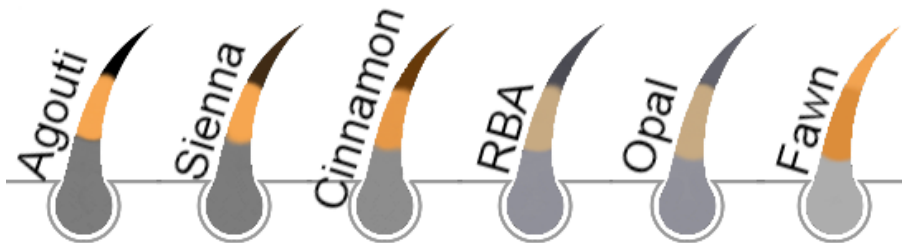


Figure 1: Rough representation of Agouti based varieties.

In Figure 1 we see a rough representation of 6 different Agouti based varieties: Agouti, Sienna, Cinnamon, Russian Blue Agouti, Opal, and Fawn. They might call something different in your country but they are all Agouti based.

Now we look at the non-agouti allele "a" which gives us Black rats. When a rat has two small 'a's on its Agouti locus we get non-agouti based rat, also known as a Black based in the hobby. Unlike the Agouti based varieties we don't see ticked hairs, we see solid colored hairs instead. This is not to say that the pigment in non-agouti rats are always solid from roots to tips, there are exceptions.



Figure 2: Rough representation of non-agouti based varieties.

In Figure 2 we see a rough representation of 6 different non-agouti based varieties: Black, Chocolate, Mink, Russian Blue, Blue, and Beige. They might call something different in your country but they are all non-agouti based.

There are non-agouti colors that do tend to have a slightly lighter color at the roots which is partly due to their undercoat being lighter than their guard hairs. Some varieties can have a much lighter base though, the most common would be Blue. The roots on the Blue variety can vary from light grey to almost white. This is not wanted but it is incredibly common for the variety.

So the recessive "a" alleles, when homozygous, gives us a non-agouti based variety which has solid colored hairs.

## Quick summary:

The Agouti locus has 2 genes: **A** (dominant) and **a** (recessive).

"A" codes for Agouti and is dominant. The "AA" and "Aa" genotypes will result in an Agouti based color.

"a" codes for non-agouti and is recessive. The "aa" genotype will result in a non-agouti based color.

All rats have either an **Agouti base** or a **non-agouti base**.