



Yucky or yummy?

How do amino acids taste to spider monkeys?

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Background:

Amino acids are the building blocks of proteins and some of them have a sweet/pleasant taste whereas others have a unsweet/unpleasant taste for humans. Monkeys may use taste of potential food to assess its palatability and nutritional value.

The aim:

To assess the taste responsiveness to the 20 L-amino acids and to determine taste sensitivity for Glycine and L-Proline.

Method:

Two-bottle preference test of short duration (1min). One of the bottles contained water and the second bottle a defined concentration of an amino acid dissolved in water.



Conclusion:

- The preference and aversion that the spider monkeys showed towards the different amino acids corresponds well with the description of sweet/pleasant and un-sweet/unpleasant given by humans to the same amino acids.
- The taste sensitivity of the spider monkeys for Glycine and L-Proline is similar to that in humans and slightly better than in mice.

Results:

Taste responsiveness

The spider monkeys significantly preferred seven amino acids over water: L-Alanine, L-Proline, Glycine, L-Aspartic acid, L-Glutamine, L-Lysine, and L-Serine.

They significantly rejected five amino acids: L-Cysteine, L-Isoleucine, L-Tyrosine and L-Valine L-Tryptophan.

Taste sensitivity

The spider monkeys are able to perceive concentrations as low as 10-50 mM of Glycine and 10-40 mM of L-Proline.