

Why does my cat need taurine?

Aurélie Lolia and Sally Bee,
Biochrom Ltd, Cambridge, UK



Using the Biochrom 30 Amino Acid Analyser, the levels of taurine can be measured. Taurine is an amino acid which is critical to be included in the domesticated cat diet.

Taurine is a sulphur-containing amino acid formally known as 2-Aminoethanesulfonic Acid that is essential for the cat.

Cats cannot synthesize sufficient taurine from other amino acids so they must have enough taurine supplied in their food. Humans and dogs, for example, synthesize taurine from the amino acids methionine and cystine.

In the wild, rodents formed a large part of the feline diet, and the rodents had significant levels of taurine in their brains. When cats became domesticated and fed on commercial cat foods instead of their wild diet, taurine deficiency started appearing. Since taurine is thermolabile, it must therefore be supplemented in the domesticated cat diet.

Taurine is a metabolic factor involved in the conjugation and excretion of bile acids. It is an important regulator of various muscle systems and is essential for proper growth.

Preformed taurine is only available from animal tissue, and high concentrations of taurine are found in the heart muscle, skeletal muscles, brain and eyes of mammals, as well as the meat from clams and oysters.

A deficiency of taurine in cats will cause Central Retinal Degeneration (eye lesions) resulting in total blindness within two years if the deficiency is not remedied, Dilated Cardiomyopathy (enlargement of the heart's chambers resulting in thinner, weaker heart walls) and reduced reproduction in queens and growths in kittens.

Cats on a vegetarian diet do not typically get enough taurine in their diets, unless a steady supplement of vegetable-derived taurine sources are included.

The Biochrom 30 lithium high performance system enables rapid quantification of taurine using D-Glucosaminic acid as internal standard.

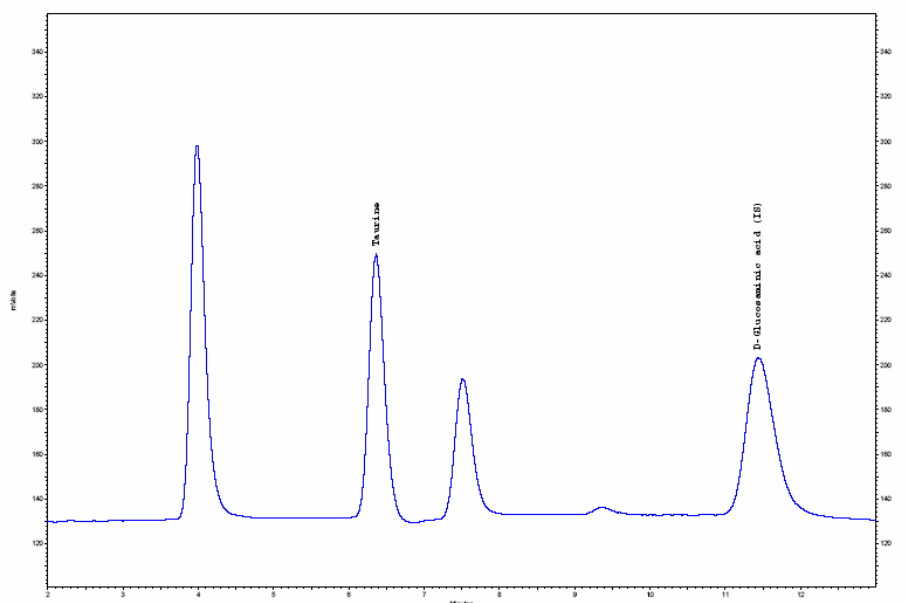


Figure 1. Short programme for taurine analysis

BioSys

Sample: Physiological Fluid std

Amount Loaded: 10 nmol

Column Type: Peek

Column Number: U-1889

Resin Batch: 11956

Bed Length (mm): 200

Diameter (mm): 4.6

Instrument Serial Number: 93739

Flow Rate (ml/h): 25 20
 Buffer Nin

	<u>Buffer</u>	<u>Molarity</u>	<u>pH</u>	<u>Batch No.</u>
Buffer 1 -	Lithium A	0.20	2.80	12280
Buffer 6 -	Lithium hydroxide Solution	0.30		11728
Reagent	Ninhydrin			12296
	Ultrasolve			12307

Title: Taurine

Nin Flow Rate: 20.0 ml/h

<u>No.</u>	<u>Time</u>	<u>Temp</u>	<u>Buffer</u>	<u>Pump</u>	<u>Nin</u>	<u>Rec</u>	<u>Commands</u>
1	01:00	45°C	1	25.0ml/h	ON	OFF	
2	00:00	45°C	1	25.0ml/h	ON	OFF	Reset
3	01:00	45°C	1	25.0ml/h	ON	OFF	Load
4	06:00	45°C	1	25.0ml/h	ON	ON	
5	06:00	80°C	6	25.0ml/h	ON	ON	
6	06:00	80°C	1	25.0ml/h	OFF	OFF	
7	20:00	45°C	1	31.3ml/h	OFF	OFF	
8	06:00	45°C	1	25.0ml/h	ON	OFF	