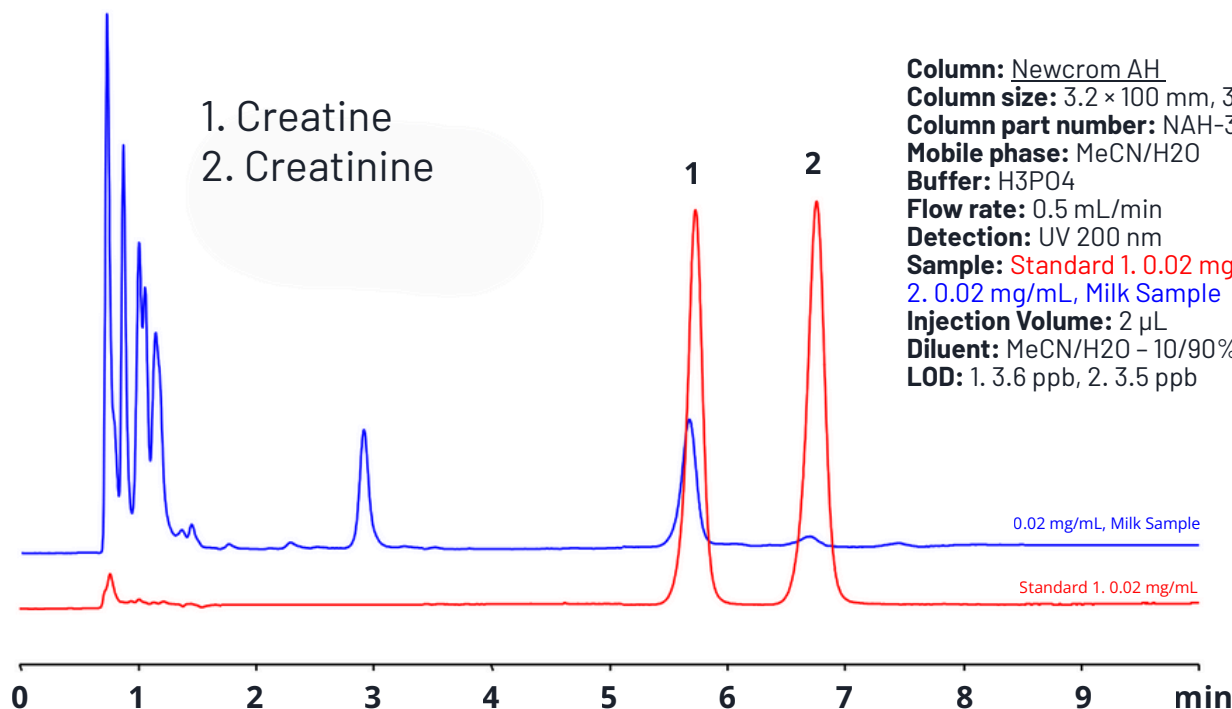


HPLC Method for Analysis of Creatine and Creatinine in Milk on Newcrom AH

THURSDAY
09/11/2025



Samples Prepared

Sample 1: Unspiked milk.

Sample 2: Milk spiked with creatine (final spiked concentration ≈ 0.02 mg/mL after preparation).

Procedure

Pipette 0.4 mL of milk into a 2 mL centrifuge tube.

For Sample 1 (unspiked): Add 0.1 mL of water.

For Sample 2 (spiked): Add 0.1 mL of 1 mg/mL creatine standard solution.

Add 0.5 mL of acetonitrile (MeCN) to each tube. Shake thoroughly to mix.

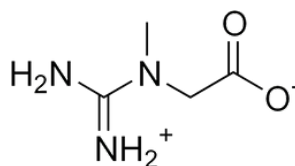
Centrifuge at 13,000 RPM for 10 minutes.

Collect the clear supernatant and filter using syringe filters (e.g., 0.22 μm or 0.45 μm).

Transfer the filtered supernatant into a clean autosampler vial.

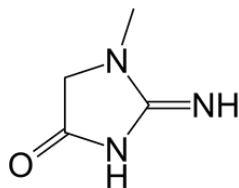
Dilute each sample 5-fold with water before analysis.

Creatine



Creatine is a naturally occurring compound found in muscles and is used to produce energy during high-intensity exercise. It is synthesized in the body from amino acids and stored in muscles for quick energy release.

Creatinine



Creatinine is a waste product from creatine metabolism, filtered by the kidneys and excreted in urine. Measuring creatinine levels in blood and urine helps assess kidney function, as elevated levels may indicate impairment or other health issues.

Creatine and creatinine are naturally occurring compounds found in milk, originating from muscle metabolism and dietary sources in lactating animals. While creatine contributes to energy metabolism, creatinine serves as a breakdown product and its levels in milk can be influenced by the animal's physiological state and kidney function.



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