

ADULTERATIONS

IC BUFFALO

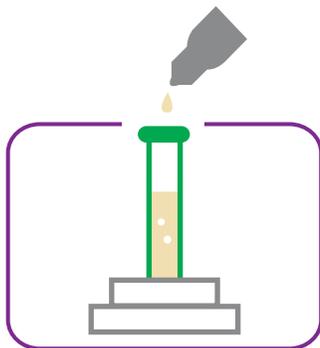
The unknown mixture of milk from different species is a common fraud in Dairy sector. Buffalo's milk is more expensive than cow's milk and tends to be adulterated with this one of lower cost. This adulteration has been reported in high added value products commanding a premium price. The most important example is Mozzarella cheese, registered with Protected Designation of Origin (PDO) that is only made from buffalo's milk. IC kits are lateral flow tests for species identification of milk. IC Buffalo is a qualitative test for detection of cow's milk in buffalo's milk.

Qualitative test for detection of cow's milk in buffalo's milk

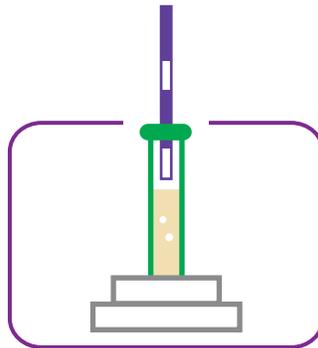


- ✓ **Simple:** one-step assay
- ✓ **Fast:** results in 10 min
- ✓ **Sensitive:** 1% of mixture in milk
- ✓ **Specific:** Detection of cow milk in buffalo milk
- ✓ **Suitable for:** raw and skimmed milk
- ✓ **Equipment:** no required

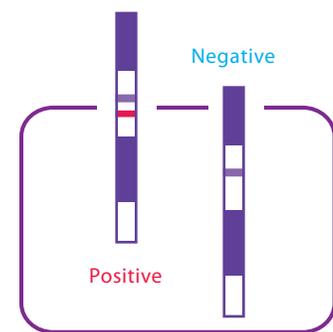
Assay procedure



1 Sample - Dilution solution



2 Dip strip - Wait 10 min



3 Result



Technical Features

SENSITIVITY / SPECIFICITY

The Limit of Detection (LOD) for this test is 0,5-1% of cow milk in buffalo milk. The table below shows that samples containing more than 0.5% of cow milk were positive. The test specificity was determined by testing milk from different species. The results show no cross reactivity with buffalo, goat or sheep milk samples.

Samples	Result
100% buffalo milk	-
100% sheep milk	-
100% goat milk	-
100% cow milk	+
10% cow milk	+
1% cow milk	+
0.5% cow milk	+

Results obtained from samples containing different amounts of cow, goat, sheep and buffalo milk.

REPRODUCIBILITY

The Intra-laboratory reproducibility of the test kit was determined by testing three different samples by three different analysts. All the samples containing more than 1% of cow milk were identified as positive by all the analysts and samples with no cow milk as negative.

Sample	Analist 1	Analist 2	Analist 3
10% cow milk	+	+	+
1% cow milk	+	+	+
100% buffalo milk	-	-	-

Results from a reproducibility study.

EFFECT OF THE INCUBATION TIME

Samples containing different levels of cow milk were tested using the IC BUFFALO kit and for incubation times of 2, 5 and 10 minutes. Table shows that doubtful results for low levels of cow milk (1%)

Sample	Result 2 minutes	Result 5 minutes	Result 10 minutes
100% cow milk	+	+	+
10% cow milk	+	+	+
1% cow milk	+/-	+	+
100% Buffalo milk	-	-	-

Results obtained when samples were incubated for different periods of time.

at 2 min became positive after 5-10 min of incubation. Therefore, incubation up to 10 minutes is recommended to obtain the maximum sensitivity of the test. Longer incubation times can however produce false results.

EFFECT OF DILUTION

According to the assay procedure milk samples (1 drop) should be diluted with 5 drops of dilution solution. The effect of other dilution volumes was tested. Samples can be diluted with 5 ± 1 drop to reproduce the same results.

Number of drops	0% cow milk	1% cow milk
4	-	+
5	-	+
6	-	+

Results obtained for milk samples diluted with different amounts of dilution solution.