SureFood® ANIMAL ID test kits

Qualitative identification and quantification



- Manual & semi-automated DNA preparation for raw meat and processed products
- IAAC (Internal Amplification and Animal Control)
- Multiplex screening

More information:

https://r-b.io/sfanid

10/2026

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Animal Identification

Species specification is of great interest: meat products can be falsified due to incorrect declaration. Inferior meat products are falsely declared and thus, a consumer is misled. This may be partly a criminal intent, but the corresponding financial damage as well as the loss of reputation can be highly immense for the distributor.

The required transparency of species identification can be of great interest, both qualitatively and quantitatively in a second step. Quantitative analyses, may detect any falsified declaration of minced meat quantities like “50 per cent pork/beef in minced meat”. Moreover, a second application is the guarantee of religious rules (Halal, Kosher). In this case, no technical threshold of any duty of declaration is tolerated, but especially for the detection of pork in food, a zero tolerance is needed. Consequently, analytical test systems should have a maximum sensitivity.

Due to the high DNA concentration in animal cells and the availability of genomic DNA in the nucleus (single copy) and highly conserved DNA in mitochondria (multi-copy DNA), the highly specific analysis of genetic information by real-time PCR is the method of choice.

Based on a high stability of DNA, it can be prepared and detected from raw meat as well as heated, processed meat products provided that DNA is present.

In highly purified products such as gelatin, the amount of present DNA has been more or less removed that a reliable measurement might be difficult or no longer be possible.

Vegetarian food

The European Vegetarian Union has established that the unintended presence of non-vegan or non-vegetarian substances should be less than 0.1% (w/w) to be conform with a vegan product labeling (V-Label).
The SureFast® VEGAN kit can be used for the reliable detection of animal DNA traces in both raw and processed food samples. The kit provides a sensitivity down to 0.01% of animal DNA to support vegan label claims. The included positive control, which comprises 0.1% of bovine DNA, can be used as a reference to set the detection threshold.



DNA preparation

Manual – Spin filter based
SureFood® PREP Basic

Semi-automated – Magnetic beads based
TANBead/SureFast® Mag PREP Food

qPCR

Identification – SureFood® ANIMAL ID

Duplex – including an internal amplification and animal control (IAAC).

4plex screening – three parameters and IAAC. In the absence of the tested target species, the IAAC can be used to determine whether another species is present in the sample.

Relative quantification – SureFood® ANIMAL QUANT
The kits contain two PCR systems, one for detection of the specific gene of interest and one for the detection of an animal gene (reference gene). Thus, the relative DNA amount of the animal of interest can be calculated by using a serial dilution series.

Included qPCR controls

IAC
The internal amplification control of the Pork SENS PLUS kit (S6117) ensures that a negative signal obtained for pork is a guaranteed real negative sample and no false negative due to possible inhibition. This is important for e.g. religiously motivated analysis ensuring the absence of pork.

IAAC
The internal animal amplification control serves as IAC. Furthermore, it enables the detection of vertebrate DNA. Hence, the resulting IAAC curve is the product of the IAC and the possible presence of vertebrate DNA. Thus, it is possible to state whether animal DNA is present or not.

Benefits

User-friendly:
- Standardized sample preparation, qPCR set up and thermo profiles
- Extracted DNA can be used for additional tests (e.g. GMO)

Time saving:
Semi-automated DNA extraction and multiplex kits

Everything from a single source:
Kits, Equipment, Support

Flexible:
qPCR cycler: FAM, VIC, HEX, Cy5

SureFood® ANIMAL ID kits

Product	Description	No. of tests/amount	Art. No.
SureFood® PREP			
SureFood® PREP Basic	DNA preparation of food and feed	100 preparations	S1052
SureFood® PREP Add-On	DNA preparation kit for 2 g sample weight in conjunction with SureFood® PREP Basic	15 extractions	S1055
SureFast® Mag PREP Food	Automated DNA extraction of food and feed. For the use in combination with the TANBead Maelstrom™ SWITCH 8 (ZSWITCH)	96 preparations	F1060
Extraction control detection kit			
SureFast® Animal+Plant control 3plex	Extraction control for plant or animal matrix including internal control DNA (ICD)	100 reactions	F4053
SureFast® VEGAN	Sensitive detection of animal (vertebrates) or plant matrix including a positive control of 0.1% bovine DNA. Detection limit: 0.01 %	100 reactions	F4055
SureFood® ANIMAL ID – qualitative real-time PCR			
SureFood® ANIMAL ID 4plex LIVESTOCK Panel	Detection of chicken, turkey, goose, muscovy duck, American pekin, pork, camel, horse, donkey, water buffalo, beef, sheep and goat. Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6134
SureFood® ANIMAL ID 4plex Beef/Sheep/Goat + IAAC	Detection limit: 0.01 % depending on matrix and DNA preparation	100 reactions	S6121
SureFood® ANIMAL ID 4plex Pork/Chicken/Turkey + IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6123
SureFood® ANIMAL ID 4plex Beef/Horse/Pork + IAAC	Detection limit: Pork 0.5 %, Beef, Horse 0.1 % depending on matrix and DNA preparation	100 reactions	S6126
SureFood® ANIMAL ID 4plex Camel/Horse/Donkey + IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6131
SureFood® ANIMAL ID Beef IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6113
SureFood® ANIMAL ID Horse IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6118
SureFood® ANIMAL ID Horse/Donkey IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6119
SureFood® ANIMAL ID Pork SENS PLUS	Detection limit: ≤ 0.0001 % depending on matrix and DNA preparation	100 reactions	S6017
SureFood® ANIMAL ID Pork IAAC	Detection limit: 0.5 % depending on matrix and DNA preparation	100 reactions	S6114
SureFood® ANIMAL ID Chicken IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6115
SureFood® ANIMAL ID Turkey IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6116
SureFood® ANIMAL ID Cat/Dog IAAC	Detection limit: 0.5 % depending on matrix and DNA preparation	100 reactions	S6112
SureFood® ANIMAL ID Water Buffalo/Beef + IAAC	Detection limit: 0.1 % depending on matrix and DNA preparation	100 reactions	S6130
SureFood® ANIMAL QUANT – quantitative real-time PCR			
SureFood® ANIMAL QUANT Beef	Detection limit: ≤ 5 DNA copies; limit of quantification: 0.04 % depending on matrix and DNA preparation	2 × 50 reactions	S1010
SureFood® ANIMAL QUANT Pork	Detection limit: ≤ 5 DNA copies; limit of quantification: 0.04 % depending on matrix and DNA preparation	2 × 50 reactions	S1011
SureFood® ANIMAL QUANT Chicken	Detection limit: ≤ 5 DNA copies; limit of quantification: 0.1 % depending on matrix and DNA preparation	2 × 50 reactions	S1014
SureFood® ANIMAL QUANT Turkey	Detection limit: ≤ 5 DNA copies; limit of quantification: 0.1 % depending on matrix and DNA preparation	2 × 50 reactions	S1015



SureFood® PREP Basic



Multiplex real-time PCR Kit

* **References:**

1. *Pelin Ulca a, Handan Balta a, İlknur Çağın a, Hamide Z. Senyuva* (2013)
   Meat species identification and Halal authentication using PCR analysis of raw and cooked traditional Turkish foods, Meat Science 94, 280-284
2. *Yasemin Demirhan a, Pelin Ulca a, Hamide Z. Senyuva*
   Detection of porcine DNA in gelatine and gelatine-containing processed food products — Halal/Kosher authentication, Meat Science 90, 686-689