SEM ELISA (5091SEM)

General

Nitrofurans are a group of synthetic broad-spectrum antibiotics, which have been widely used for the prevention and treatment of gastrointestinal infections. Moreover, nitrofurans have been employed as growth promoters in livestock.
The four major nitrofurans are furazolidone, furaltadone, nitrofurantoin and nitrofurazone. They are banned in the EU for use as veterinary drugs due to their toxic properties. In 2003 a MRPL (Minimum Required Performance Limit) was set at 1 ppb in the EU for all four of the above mentioned nitrofurans in poultry and aquaculture products (Commission Decision 2003/181/EC).
Nitrofurans are rapidly metabolised in animal tissue to persistent protein-bound residues. SEM is the resistant metabolite of the parent compound nitrofurazone.

The **SEM ELISA** is a competitive enzyme immunoassay based on antibodies directed against SEM.

Kit characteristics

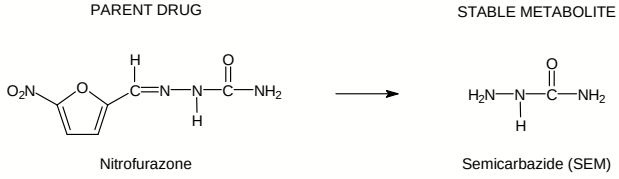
***Microtiter plate*:**
96 wells
12 x 8 Breakapart

***Antibody cross-reactivity*:**

SEM	100%
AMOZ	< 0.01%
AOZ	< 0.01%
AHD	< 0.01%

Conjugate:
SEM-HRP stabilized

Standard range (ready-to-use):
0, 0.019, 0.056, 0.167, 0.5, 1.5 and 4.5 ng/ml
SEM-NP



Chemical structure of Nitrofurazone and its metabolite SEM

Assay characteristics

Matrices	***LOD (ppb)***
Tissue (muscle, liver)	0.2
Shrimps	0.1
Fish	0.2
Egg (powder)	0.1
Milk	0.1
Honey	0.2
Urine	0.3

The Limit of detection (LOD) is calculated as: Xn+3SD and is determined under optimal conditions.

Sample preparation
For tissue (muscle, liver), shrimps, fish, egg (powder), milk honey and urine fast and efficient methods are included in the kit manual.

Procedure
Derivated SEM (standard or sample) and SEM-HRP are added to the wells that are pre-coated with a specific antibody to SEM. After incubation of 30 minutes at 20°C - 25°C, the wells are washed. Substrate/chromogen solution is then added and incubated for 15 minutes at 20°C - 25°C. The reaction is stopped and the absorbance is read in a spectrophotometer at 450 nm.
EuroProxima's user-friendly software converts the measured optical density into the concentration of the metabolite in the starting material.