

RECEPTOR ASSAY FOR TETRACYCLINES

Tetracycline are a wide group of antibiotics which act against Gram-positive, Gram-negative bacteria, anaerobic and intracellular microorganisms, inhibiting proteic synthesis. Their chemical structure is based on 4 condensed rings, partially hydrogenated. These antibiotics are often included in medicated feeds, used in veterinary practice to prevent and control some diseases, but also to increase animals' ponderal state; the effective daily dose is very high. With Regulation n. 2377/90, European Commission established the MRLs for this group of antimicrobial drugs: 100 ppb for milk and muscle, 200 ppb for eggs, 300 ppb for liver, 600 ppb for kidney and 10 ppb for honey.

Assay principle

Receptorial assay.

Applications

Tissues, urine, raw milk, honey, eggs, seafood.

Standard range curve

5 - 100 ng/ml.

Detection limits

Tissues, raw milk, honey, eggs, seafood:

- 50 ppb.

Urine:

- 500 ppb.

Measuring range

Tissues, raw milk, honey, eggs, seafood

- 50 – 1000 ppb.

Urine

- 500 – 10000 ppb.

Specificity (% of cross-reattività)

Sample preparation

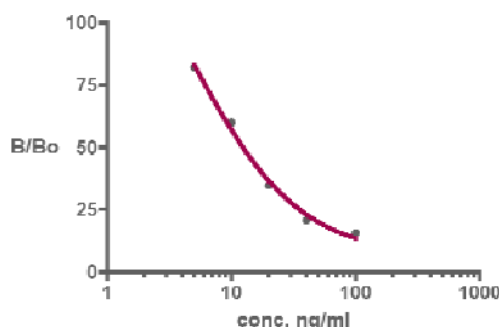
Tetracycline	100
Oxytetracycline	60
Chlortetracycline	400
Doxycycline	800

- Tissues, eggs, seafood: grinding, dilution, homogenization, incubation, centrifugation, filtration.
- Honey: dilution.
- Raw milk, urine: centrifugation, dilution.

Assay time

1 h and 30 min (sample preparation not included).

Example of calibration curve



Advantages

- Reveals a wide range of tetracyclines.
- Measuring range consistent with MRL for tissues, milk and eggs.
- Validated on different matrices.
- Easy sample preparation with buffers ready to use and without column purification.
- Free spreadsheet downloadable at www.tecna.it/b.com to calculate sample concentration.

Storage

+2/+8 °C.

Shelf-life

8 months from date of manufacturing. (After resuspension, the lyophilized reagents cannot be conserved and therefore they are supplied in aliquots.)

SuperScreen

TETRA

Cat. N. AB701/AB702

Kit contents

- Microtiter 48/24 wells (AB701 / A B 702), 6/3 strips with 8 breakable wells.
- Tetracycline standard, lyophilized (3/2 vials).
- Standard diluent, ready to use.
- Receptor, lyophilized (3/2 vials).
- Receptor diluent, ready to use.
- Enzyme conjugate, concentrated.
- Enzyme conjugate diluent, ready to use.
- Dilution buffer, concentrated.
- Washing buffer, concentrated.
- Developing solution, ready to use.
- Stop solution, ready to use.
- Istructions.

Manufacturer

Tecna Srl, ISO9001/UN I EN ISO 9001 – Ed. 2000 (SGS, N°. IT01/0291).

Materials not provided

- Distilled water.
- Ice (tissues, eggs, seafood).
- Sodium hydroxide 0.5N (tissues, honey, urine, eggs, seafood).

Additional equipment

- Blender (tissues, eggs, seafood).
- Balance (tissues, eggs, seafood, honey).
- Vortex (tissues, eggs, seafood, honey).
- Centrifuge, possibly refrigerated (force required: 2000 xg for tissues, eggs, seafood and urine; 3000 xg for milk).
- Filter paper (tissues, eggs, seafood).
- pHmeter or litmus paper (tissues, eggs, seafood, honey, urine).
- Micropipette 20-200 μ l and 200-1000 μ l with suitable tips.
- Multichannel micropipette 20-300 μ l with suitable tips and reagent boats (optional).
- ELISA plate or strip reader with a 450 nm filter.