

BEADYPLEX™

Diagnostics for Food Safety

Discover the new Flow Cytometric Immunoassay
for the simultaneous screening of 10 antibiotic families

PORCINE



BOVINE



POULTRY



EGG/MILK



SEAFOOD



“ A powerful analytical tool to prevent the presence
of **antibiotic** residues in the food chain ”



1
SINGLE
TEST

10
ANTIBIOTIC
FAMILIES

MORE THAN
80
RESIDUES

WHY BEADYPLEX™

The misuse of antibiotics in animal farming regularly leads to the presence of residues in edible products. Early detection of these residues is essential to guarantee consumer protection and industrial food processing.

BEADYPLEX™ is an efficient screening method for the analysis of most relevant veterinary antibiotics in different food commodities, providing family identification in one single analysis per sample.

ASSAY PRINCIPLE

BEADYPLEX™ combines simultaneous competitive immunoassays in the same single reaction. The test uses unique reagents comprising mixtures of antibiotic-conjugated beads (assay competitors), broad-range antibiotic binders (receptors and antibodies), and fluorescent secondary binders. Each bead, individually encoded by its specific size and internal fluorescence, in combination with a primary binder, enables the detection of well-defined groups of antibiotics.

In a first assay step the beads and primary binders are incubated with the sample extract. In the second assay step the labelled secondary binders detect the remaining primary binders on the beads surface, thus generating the final assay signal. The resulting “beads-binders” complexes are then characterized by the Flow Cytometer, which entails the classification of the beads by discrimination of their sizes and internal fluorescence levels, and the measurement of external fluorescence intensities. The presence of antibiotics from a particular family is identified by a signal decrease for the corresponding encoded bead, with respect to a zero dose control sample.

“ *This early detection facilitates the selection of confirmatory methods, and considerably reduces time and global costs of analysis* ”

1 TEST / 10 ANTIBIOTICS FAMILIES

TETRACYCLINES	SULFONAMIDES (INCL. DAPSONE)
β-LACTAMS	AMINOGLYCOSIDES
LINCOSAMIDES	MACROLIDES
POLYMYXINS	PHENICOLS (INCL. CHLORAMPHENICOL)
(FLUORO)QUINOLONES	PLEUROMUTILINS

TEST PROCEDURE

BUFFER EXTRACTION

01

Take 1g
of sample



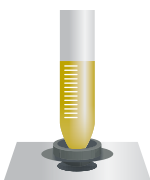
02

Add 1 ml of
extraction buffer



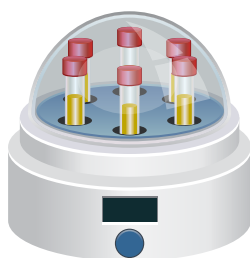
03

Shake
10 min.



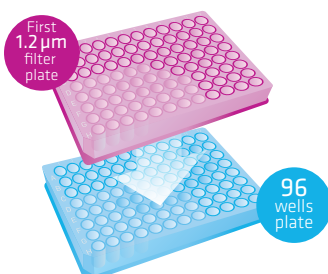
04

Centrifuge
15 min.



05

Filtrate
supernatant



ASSAY (96-MICROPLATE FORMAT)

01

Add 50 µl filtrated extract
+ 50 µl beads mix
+ 50 µl primary binders mix per well



INCUBATE 30 MIN.
+ WASH

02

Add 150 µl fluorescent
secondary binders per well

INCUBATE 15 MIN.
+ WASH

03

Add 150 µl assay buffer per well

PLATE READING

04

Microplate analysis with Flow Cytometer



BENEFITS



BROAD SPECTRUM

> 80 antibiotics
from 10 families
in one single test.



HIGH THROUGHPUT

96 tests
in microplate format.



SENSITIVITY/SELECTIVITY

Low limits of detection
(\leq MRL).



ROBUSTNESS

Reliable results.



RAPIDITY

From sample to results
in a few hours.



USER-FRIENDLY



BROAD APPLICABILITY

Muscle tissue (porcine, bovine
and poultry), fish and seafood,
eggs and raw milk.



ECO-FRIENDLY

No organic solvents required.

PRODUCT REFERENCE

KIT087
BEADYPLEX
96 tests

CONTENT

- 2x 1.2 μ m filterplate (96 wells)
- 1x 96 wells microplate
- 2x Assay buffer bottles
- 1x Extraction buffer bottle
- 1x Beads mix vial
- 1x Primary binders vial
- 1x Secondary binders vial
- 2x Positive standard vials

SENSITIVITY

LIMITS OF DETECTION (PPB) FOR REPRESENTATIVE ANTIBIOTICS

Family	Antibiotic	Porcine muscle	Bovine muscle	Poultry muscle	Salmon	Tuna	Prawn	Egg	Raw milk
Aminoglycosides	Streptomycin	250	250	250	≤ 500	≤ 500	≤ 500	≤ 500	≤ 200
	Gentamicin	50	50	50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 100
β -Lactams	Amoxicillin	50	50	50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 4
Lincosamides	Lincomycin	25	25	25	≤ 100	≤ 100	≤ 100	≤ 50	≤ 150
Polymyxins	Colistin	150	150	150	≤ 150	≤ 150	≤ 150	≤ 300	≤ 50
Macrolides	Tylosin A	10	10	10	≤ 100	≤ 100	≤ 100	≤ 200	≤ 50
Sulfonamides	Sulfadiazine	50	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100
Phenicol	Chloramphenicol	0.45	> 0.45	> 0.45	> 0.45	> 0.45	> 0.45	≤ 0.45	≤ 0.45
Tetracyclines	Oxytetracycline	50	50	50	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100
(Fluoro)quinolones	Enrofloxacin	5	5	5	≤ 100	≤ 100	≤ 100	≤ 100	≤ 100
Pleuromutilins	Valnemulin	50	50	50	≤ 50	≤ 50	≤ 50	≤ 50	≤ 50

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