



Test Kits for Food Safety Research



About Elabscience

Elabscience specializes in immunodiagnostic technology for life Science community. We have complete platform for R&D and manufacture. At the same time, we have in house QC for every product, endeavoring to keep your experiment results more consistent and precise. Through unremitting effort and development, our customers have spread in more than 100 countries all over the world. Elabscience major products cover Proteins, Antibodies, ELISA Kits, CLIA Kits, Labeling Kits and related reagents. Besides, Elabscience also contributes to food safety, which is a key problem of human health, Elabscience offers fast and effective detecting products for residues of veterinary drug, and mycotoxin which are acclaimed by scientific research institutes, universities and animal husbandry.

Food Safety

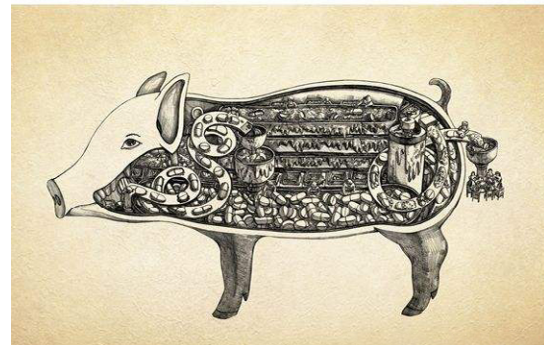
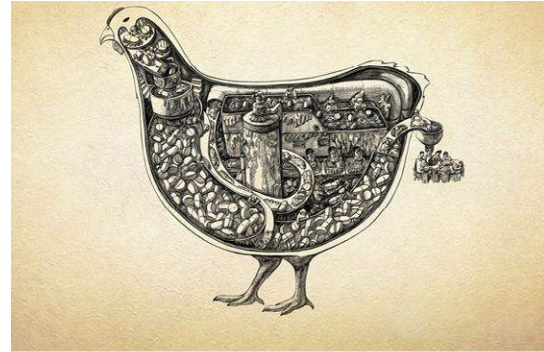


Background

Food safety is a key problem always bothering us human beings, one of the most crucial cause of food pollution is residues of veterinary drug which is short for “persistence of veterinary drug in animal-derived food”; According to the definition of residues of veterinary drug in food by united nations food agriculture organization and world health organization (FAO and WHO), residues of veterinary drug indicates that persistence of drug and its relative impurities in the body of animals or prototype drug and metabolite in products (such as milk, dairy and eggs) after drug feeding, it is measured in $\mu\text{g/mL}$ or $\mu\text{g/g}$ in general.

Harm of residues of veterinary drug

- **Toxin reaction:** When concentration of residues of drug is beyond a certain threshold value, it will cause chronic intoxication in human body. For example, eating pig's lung with content of clenbuterol hydrochloride exceeding normal level results in acute poisoning, because functions of drug metabolism of infants are not fully developed, if chloramphenicol content is beyond normal index, it could cause fatal "Grey baby syndrome" and develop into aplastic anemia.
- **Generation of drug-resistance bacteria:** It's possible for drug-resistance bacteria to reproduce, if animals are always exposed to a certain antibiotic. Appearing of drug-resistance bacteria make it tough to use normal drugs like penicillin, chloramphenicol and gentamicin to cure the diseases, also clinical patients get ineffectual treatment.
- **"The three worst results":** It's reported that many drugs have effect on resulting in carcinoma, malformation and mutation. For instance, parbendazole and fenbendazole could cause malformation and estrogen, clopidol and nitrofurantoin could induce canceration.





- **Anaphylaxis:** Many anti-bacteria drugs such as penicillin, tetracycline and sulfanilamide can lead to anaphylaxis even shock or symptoms like rash, laryngeal edema, dyspnea and acute hypotension.
- **Alteration of intestinal flora:** It leads to death of some non-pathogenic intestinal flora, causing long-term diarrhea, lack of vitamin of any symptom further.
- **Environmental influence:** After fed with drugs, some stable-property drug in excrement and urine excreted could even exist stably and leave residues of drug in environment. For example, arsenic has negative influence on development of azotobacteria, phosphate solubilizing bacteria, fungi and actinomyces.
- **Effect on raising livestock:** Long-term abusing drug restricts the healthy and sustainable development of animal husbandry. For example, long-term using antibiotic leads to livestock's reduction of immunity; and it's more and more difficult to control development of bacteria under the situation that more drug-resistance bacteria shows up.



Product List

Cat. No.	Product name	Sample type	Sensitivity	Product type
E-FS-C001	AMTZ (Furaltidone Metabolite) Rapid Test Kit	Honey,Tissue,Casing,Liver	1 ppb	Colloidal gold
E-FS-C002	AOZ (Furazolidone Metabolite) Rapid Test Kit	Honey,Tissue,Casing,Liver	1 ppb	Colloidal gold
E-FS-C003	AHD (Aminohydantoin Hydrochloride) Rapid Test Kit	Honey,Tissue,Casing,Liver	1 ppb	Colloidal gold
E-FS-C004	SEM (Nitrofurazone Metabolite) Rapid Test Kit	Honey,Tissue,Casing,Liver	1 ppb	Colloidal gold
E-FS-C005	CLE-RAC-SAL (Clenbuterol-Ractopamine-Salbutamol) Rapid Test Kit	Urine,Fodder	3 ppb/3 ppb/5 ppb	Colloidal gold
E-FS-C006	CLE (Clenbuterol) Rapid Test Kit	Urine,Fodder	3 ppb	Colloidal gold
E-FS-C007	MG (Malachite Green) Rapid Test Kit	Tissue,Water sample	1 ppb/2 ppb	Colloidal gold
E-FS-C008	RAC (Ractopamine) Rapid Test Kit	Urine,Fodder	3 ppb	Colloidal gold
E-FS-C009	MEL (Melamine) Rapid Test Kit	Raw milk,Milk	500 ppb	Colloidal gold
E-FS-C010	SAL (Salbutamol) Rapid Test Kit	Urine,Fodder	5 ppb	Colloidal gold
E-FS-C011	PHEA (Phenylethanolamine A) Rapid Test Kit	Urine	3 ppb	Colloidal gold
E-FS-C012	MEL (Melamine) Rapid Test Kit	Raw milk,Milk	100ppb	Colloidal gold
E-FS-C013	CLE (Clenbuterol) Rapid Test Kit	Tissue	3 ppb	Colloidal gold
E-FS-C014	RAC (Ractopamine) Rapid Test Kit	Tissue	8 ppb	Colloidal gold
E-FS-C015	SAL (Salbutamol) Rapid Test Kit	Tissue	10 ppb	Colloidal gold
E-FS-C016	CLE-RAC-SAL (Clenbuterol-Ractopamine-Salbutamol) Rapid Test Kit	Tissue	3 ppb/8 ppb/10 ppb	Colloidal gold
E-FS-C017	CLE-RAC-SAL (Clenbuterol-Ractopamine-Salbutamol) Rapid Test Kit	Urine,Fodder	2 ppb/3 ppb/3 ppb	Colloidal gold



Cat. No.	Product name	Sample type	Sensitivity	Product type
E-FS-C026	CAP (Chloramphenicol) Rapid Test Kit	Milk,Tissue,Honey	0.3 ppb	Colloidal gold
E-FS-C027	QNs (quinolones) Rapid Test Kit	Tissue,Honey	0.5 ppb(ENR)	Colloidal gold
E-FS-C028	SAs (Sulfonamides) Rapid Test Kit	Tissue,Honey,Milk	20 ppb(SM2)	Colloidal gold
E-FS-C030	TCs (Tetracycline) Rapid Test Kit	Tissue,Honey	10 ppb	Colloidal gold
E-FS-C031	TCs (Tetracycline) Rapid Test Kit	Milk	10 ppb	Colloidal gold
E-FS-C033	SAs (Sulfonamides) Rapid Test Kit	Tissue	2 ppb(SDZ)	Colloidal gold
E-FS-C034	QNs (Quinolones) Rapid Test Kit	Tissue	2 ppb(ENR)	Colloidal gold
E-FS-C035	CPFX (Ciprofloxacin) Rapid Test Kit	Tissue,Honey	1 ppb	Colloidal gold
E-FS-C036	QNs (Quinolones) Rapid Test Kit	Tissue	5 ppb(ENR)	Colloidal gold
E-FS-E001	DES (Diethylstilbestrol) ELISA Kit	Tissue,Pork/Liver,Chichen/Liver	0.05 ppb	ELISA
E-FS-E002	AMOX (Furaltadone Metabolite) ELISA Kit	Tissue,Liver,Honey,Milk(liquid/powder), Casing,Egg powder,Fodder,Fish,Shrimp	0.05 ppb	ELISA
E-FS-E003	AOZ (Furazolidone Metabolite) ELISA Kit	Tissue,Liver,Milk(liquid/powder),Egg powder,Fodder,Honey,Casing	0.05 ppb	ELISA
E-FS-E004	AHD (Aminohydantoin Hydrochloride) ELISA Kit	Tissue,Liver,Milk(liquid/powder),Egg powder,Fodder,Honey,Casing	0.02 ppb	ELISA
E-FS-E005	SEM(Nitrofurazone Metabolite) ELISA Kit	Tissue,Liver,Milk(liquid/powder),Egg powder,Fodder,Honey,Casing	0.05 ppb	ELISA
E-FS-E006	Am (Amantadine) ELISA Kit	Tissue	0.5 ppb	ELISA
E-FS-E007	OQX (Olaquinox) ELISA Kit	Tissue,Fodder	0.5 ppb	ELISA
E-FS-E008	MQCA (Methyl-3-quinoxaline-2-carboxylic acid) ELISA Kit	Muscle,Pork liver	0.3 ppb	ELISA
E-FS-E009	DEX (Dexamethasone) ELISA Kit	Muscle tissue,Milk,Fodder	0.1 ppb	ELISA
E-FS-E010	MEL (Melamine) ELISA Kit	Milk(liquid/powder),Fodder,Tissue,Egg,Serum	2 ppb	ELISA





Cat. No.	Product name	Sample type	Sensitivity	Product type
E-FS-E011	MNZ (Metronidazole) ELISA Kit	Tissue,Honey	0.5 ppb	ELISA
E-FS-E012	RAC (Ractopamine) ELISA Kit	Urine,Tissue,Liver,Fodder	0.1 ppb	ELISA
E-FS-E013	MG (Malachite Green) Rapid Test Kit	Fish/Shrimp	0.025 ppb	ELISA
E-FS-E014	CLE (Clenbuterol) ELISA Kit	Urine, Tissue, Fodder	0.1 ppb	ELISA
E-FS-E015	PHEA (Phenylethanolamine A) ELISA Kit	Urine, Tissue, Fodder	0.1 ppb	ELISA
E-FS-E016	SUD (Sudan Red) ELISA Kit	Tomato juice,Ketchup,Sambal,Paprika, Fodder,Egg	0.3 ppb	ELISA
E-FS-E017	SAL (Salbutamol) ELISA Kit	Urine, Tissue, Fodder	0.1 ppb	ELISA
E-FS-E019	MEL (Melamine) ELISA Kit	Milk(liquid/powder),Fodder,Tissue,Egg,Serum	1 ppb	ELISA
E-FS-E020	TMP (Trimethoprim) ELISA Kit	Fodder,Tissue,Serum/Urine/Plasma	0.03 ppb	ELISA
E-FS-E021	SMZ (Sulfamethoxazole) ELISA Kit	Tissue, Serum,Urine,Egg,Honey,Milk,Fodder	0.1 ppb	ELISA
E-FS-E022	SAR (Sarafloxacin) ELISA Kit	Tissue,Honey,Milk(liquid/powder)	0.1 ppb	ELISA
E-FS-E023	TMP (Trimethoprim) ELISA Kit	Fodder,Tissue,Serum/Urine/Plasma	0.015 ppb	ELISA
E-FS-E024	CTC (Chlorotetracycline) ELISA Kit	Tissue,Liver,Egg,Honey,Urine	0.1 ppb	ELISA
E-FS-E025	CLE (Clenbuterol) ELISA Kit	Urine, Tissue, Fodder	0.05 ppb	ELISA
E-FS-E026	CIM (Cimaterol) ELISA Kit	Urine, Tissue, Fodder	0.3 ppb	ELISA
E-FS-E027	DZP (Diazepam) ELISA Kit	Urine, Tissue, Fodder	0.3 ppb	ELISA
E-FS-E030	CAP (Chloramphenicol) ELISA Kit	Tissue,Liver,Honey,Milk(liquid/powder),Egg, Water sample,Urine,Serum,Casing,Fodder	0.05 ppb	ELISA
E-FS-E031	SM (Streptomycin) ELISA Kit	Tissue,Honey,Milk	0.1 ppb	ELISA
E-FS-E032	ENR (Enrofloxacin) ELISA Kit	Tissue,Honey,Milk(liquid/powder),Egg	0.1 ppb	ELISA



Cat. No.	Product name	Sample type	Sensitivity	Product type
E-FS-E033	CPFX (Ciprofloxacin) ELISA Kit	Tissue,Honey,Milk(liquid/powder),Egg	0.1 ppb	ELISA
E-FS-E034	QNs (Quinolones) ELISA Kit	Honey,Tissue,Milk(liquid/powder),Egg,Urine	0.1 ppb	ELISA
E-FS-E035	NMZ (Nitroimidazole) ELISA Kit	Tissue,Honey	0.5 ppb	ELISA
E-FS-E037	SAs (Sulfonamides) ELISA Kit	Tissue,Serum,Urine,Egg,Honey,Milk,Water sample	0.5 ppb	ELISA
E-FS-E038	SAs (Sulfonamides) ELISA Kit	Tissue,Serum,Urine,Egg,Honey,Milk	0.5 ppb	ELISA
E-FS-E039	SAs (Sulfonamides) ELISA Kit	Tissue,Serum,Urine,Honey,Milk	0.5 ppb	ELISA
E-FS-E040	SAs (Sulfonamides) ELISA Kit	Tissue,Serum,Urine,Egg,Honey,Milk,Fodder	0.1 ppb	ELISA
E-FS-E041	TCs (Tetracycline) ELISA Kit	Tissue,Liver,Egg,Honey,Urine	0.3 ppb	ELISA
E-FS-E043	SM2 (Sulfamethazine) Assay Kit	Tissue,Serum,Honey,Milk,Egg,,Urine	0.5 ppb	ELISA
E-FS-E044	CAP (Chloramphenicol) ELISA Kit	Tissue,Liver,Honey,Milk(liquid/powder),Egg,Water sample,Urine,Serum,Casing,Fodder	0.025 ppb	ELISA
E-FS-E045	CAP (Chloramphenicol) ELISA Kit	Tissue,Liver,Honey,Milk(liquid/powder),Egg,Water sample,Urine,Serum,Casing,Fodder	0.075 ppb	ELISA
E-FS-E046	TCs (Tetracycline) ELISA Kit	Tissue,Liver,Egg,Honey,Urine	0.05 ppb	ELISA
E-FS-E049	SAs (Sulfonamides) ELISA Kit	Tissue,Serum,Urine,Honey,Milk	0.5 ppb	ELISA
E-FS-E050	SQX (Sulfaquinoxaline) ELISA Kit	Tissue,Serum,Urine,Honey,Milk,Fodder	0.5 ppb	ELISA
E-FS-E051	SMM (Sulfamonomethoxine) ELISA Kit	Tissue,Serum,Urine,Honey,Milk	0.05 ppb	ELISA
E-FS-E052	SMD (Sulfametoxydiazine) ELISA Kit	Tissue,Serum,Urine,Honey,Milk	0.05 ppb	ELISA
E-FS-E053	FQNs (Fluoroquinolones) ELISA Kit	Tissue,Honey,Milk(liquid/powder),Egg,Urine	0.1 ppb	ELISA
E-FS-E054	FQNs (Fluoroquinolones) ELISA Kit	Tissue,Honey,Milk(liquid/powder),Egg,Urine	0.2 ppb	ELISA
E-FS-E055	QNs (Quinolones) ELISA Kit	Tissue,Honey,Milk(liquid/powder),Egg,Urine	0.2 ppb	ELISA
E-FS-E056	ENR (Enrofloxacin) ELISA Kit	Tissue,Honey,Milk(liquid/powder),Egg,Urine	0.2 ppb	ELISA



Mycotoxin



Background

Mycotoxin is a kind of poisonous secondary metabolite of filamentous fungi, such as *aspergillus*, mould, *fusarium*, *alternaria alternata* and *chaetomium cupreum* etc. The first two kinds of mycotoxin separated and purified were penicillic acid and ergot alkaloids, many other mycotoxins came out from 1930s~1940, but research of mycotoxins started after aflatoxin was recognized in 1962. Up to now, there are already over 300 kinds of mycotoxin which have been found in nature, and they are sorted by significance and harmfulness, the sequence of toxicity from strong to weak is aflatoxin, ochratoxin, trichothecenes and zearalanone.

Harm of mycotoxin to domestic animals and poultry



- Rate of laying eggs and fertilization decline.
- Weight and reward of feeding of poultry decline.
- Poultry come down to dental ulcer and apastia.
- Flippers turn white and eggs turn yellow, feathers in a mess.
- Urine amount increases, faeces turn soft.
- Gilt: pseudoestrus, suppuration before copulation, backup female pigs have failure on oestrus.
- Pregnant sow: abortion rate increase, so does the rate of weak piggy, stillbirth.
- Adult pigs have high rate to come down with respiratory disease.
- Pigs always vomit and lose weight unusually.
- The immunity of poultry drops and get sick.

Product List

Cat. No.	Product name	Sample Type	Sensitivity	Product type
E-TO-C001	AFB1(Aflatoxin B1) Rapid Test Kit	Grain,Fodder,Oil	2 ppb	Colloidal gold
E-TO-C002	ZEN(Zearalenone) Rapid Test Kit	Grain,Fodder,Oil	12 ppb	Colloidal gold
E-TO-C003	DON(Deoxynivalenol) Rapid Test Kit	Grain,Fodder,Oil	50 ppb	Colloidal gold
E-TO-C004	DON(Deoxynivalenol) Rapid Test Kit	Grain,Fodder,Oil	30 ppb	Colloidal gold
E-TO-C005	AF(Aflatoxin) Rapid Test Kit	Grain,Fodder,Oil	1 ppb	Colloidal gold
E-TO-C006	AFB1(Aflatoxin B1) Rapid Test Kit	Grain,Fodder,Oil	1 ppb	Colloidal gold
E-TO-C007	ZEN(Zearalenone) Rapid Test Kit	Grain,Fodder,Oil	20 ppb	Colloidal gold
E-TO-E001	OTA(Ochratoxin A) ELISA Kit	Grain,Fodder	1 ppb	ELISA
E-TO-E002	ZEN(Zearalenone) ELISA Kit	Grain,Fodder	0.3 ppb	ELISA
E-TO-E003	DON(Deoxynivalenol) ELISA Kit	Grain,Fodder	3 ppb	ELISA
E-TO-E004	T2(T-2 Toxin) ELISA Kit	Peanut,Corn,Oat,Soybean,Fodder,Wheat	0.05 ppb	ELISA
E-TO-E005	FB1(Fumonisin B1) ELISA Kit	Corn,Fodder,Edible oil	0.5 ppb	ELISA
E-TO-E006	AF(Total Aflatoxin) ELISA Kit	Grain,Formula feed,Edible oil,Peanut,Sauce/ Wheat/Barley feed,Beer,Wine/Soy sauce/Vinegar	0.02 ppb	ELISA
E-TO-E007	AFM1(Aflatoxin M1) ELISA Kit	Milk(liquid/powder)	0.05 ppb	ELISA
E-TO-E008	AFB1(Aflatoxin B1) ELISA Kit	Grain,Formula feed,Edible oil,Peanut,Sauce/ Wheat/Barley feed,Beer,Wine/Soy sauce/Vinegar	0.03 ppb	ELISA
E-TO-E010	AFB1(Aflatoxin B1) ELISA Kit	Grain	0.01 ppb	ELISA
E-TO-E011	DON(Deoxynivalenol) ELISA Kit	Grain,Fodder	10 ppb	ELISA
E-TO-E012	AFM1(Aflatoxin M1) ELISA Kit	Urine	0.05 ppb	ELISA



Detection Method

Definition of serological reaction

Antigen can combine specifically with certain antibody. Under the influence of reaction condition, it might show with a certain reaction phenomenon, such as gathering or precipitating, so we can use known antibody or antigen to detect unknown antigen or antibody. Antibody used in experiment always exists in serum, so it is also called serological reaction.

Comparison with serological detection method

Test method	Sensibility	Specificity	Result determined	Complexity of operation
Agglutination test	< 1 µg/L	Low	Hard to judge	Complex
Hemagglutination inhibition test	< 0.1 µg/L	Low	Hard to judge	Complex
ELISA	< 1 ng/L	High	Read by microplate reader	Easy
Colloidal gold labeling	< 50 ng/L	High	Colourimetric card	Easy

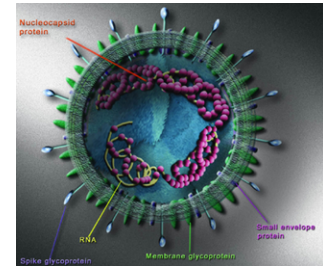


Definition of antigen and antibody

Antigen:

Ag is short of antigen, a substance can trigger the immune reaction. Invaders can be recognized by immune globulin secreted by B cell, disposed by antigen presenting cell and combined with major histocompatibility complex (MHC), then activate T cell to induce a series of immunoreaction.

- **Antigen detection:** Detection of pathogen content in animal body.
- **The main role:** To diagnose whether the animal carrying a virus.



Antibody:

Ab is short of antibody, a large protein in Y shape which is secreted by plasma cell also called effective B cell to identify and neutralize foreign matters from outside of body such as bacteria and virus. Antibody is only found in body fluid like blood or B cell membrane of vertebrate, it can recognize a certain kind of invader called antigen.

- **Antibody detection:** Detection of antibody level in animal body.
- **The main role:** To assess the vaccine effect.



Advantages of colloidal gold test kit

- Quick detection: 10~20 min for each sample.
- High sensitivity, strong specificity and easy operation.
- Low cost and no need for expensive instruments.
- Results are clear and could be observed by naked eyes.



Advantages of ELISA test kit

- Very sensitive, can detect sample at the level of nanogram even pictogram.
- Coefficient of variation is less than 15%, quality guarantee period is more than 1 year.
- Good repeatability and high stability.
- Short time spent on detection, you can receive your result after only about 1 hour.
- Results are read by apparatus with great objectivity.

Distributed by:



Tel.: 915 515 403

Fax: 914 334 545

e-mail: info@bionova.es

www.bionova.es