ELISA Kit for Environmental Pollutants

Veterinary Medicine

Sulfamethoxazole ELISA Kit

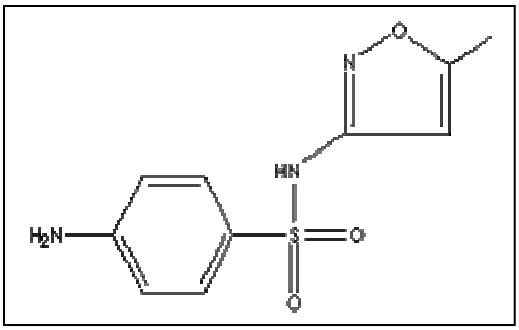
◇ The antibody binds Sulfamethoxazole and does not cross-react with other non-related antibiotics.

◇ The assay range is between 0.025 ppb and 1.0 ppb. This supersensitive assay allows the determination of Sulfamethoxazole in a wide range of environmental samples (water, soil, sediment, fish tissue, etc.).

◇ Total time for measurement is 90 minutes.

◇ The kit (96 Tests), a microtiter plate format with color coded and ready to use reagents, enables faster assay kinetics, super sensitivity, and the simultaneous measurement of multiple samples at a reasonable cost.

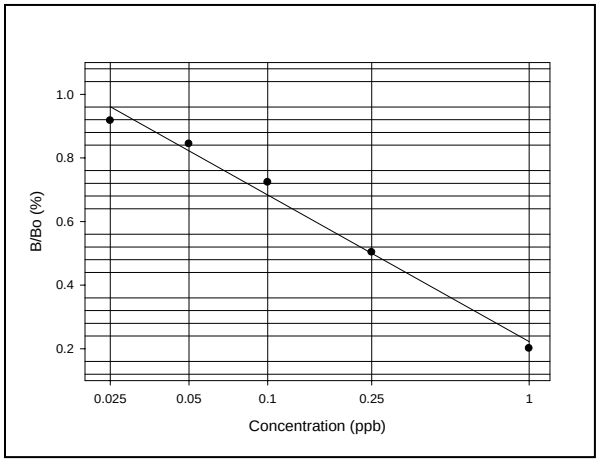
Chemical Structure



Sulfamethoxazole is a sulfonamide bacteriostatic antibiotic. It is a widely used antibiotic used to treat urinary tract infections, bronchitis, middle ear infection, etc. It is also used in veterinary medicine. Sulfonamides inhibit normal bacteria utilization of PABA for the synthesis of folic acid, an important metabolite in DNA synthesis. Bacterial resistance to sulfamethoxazole occurs by mutations in the folic acid enzyme that prevents the drug from binding and blocking folic acid synthesis.

In the US there is an extensive use of antibiotics (> 50 millions tons produced annually. Antibiotics are poorly absorbed by humans and animals. About 25% to 75% of the antibiotic will be excreted by the organism unaltered via urine or feces. A recent USGS national reconnaissance study found that about 20% of streams and rivers contain Sulfamethoxazole, with a median of 0.066 ppb and a maximum of 0.52 ppb.

Sulfamethoxazole Standard Curve



Water samples containing sulfamethoxazole within the dynamic range (0.025- 1.0 ppb) of the assay can be directly tested in the ELISA. Filtration might be necessary prior to analysis if sediment is present.

Basic Test procedure

- Add 75 uL of standards, samples, and 50 uL of antibody solution to wells coated with a secondary antibody. Swirl for 30 seconds to mix.
- Incubate for 20 minutes.
- Add 50 uL of Sulfametoxazole enzyme conjugate. Swirl for 30 seconds to mix.
- Incubate for 40 minutes.
- Decant and wash 3 times.
- Add 150 uL of color solution.
- Incubate 30 minutes.
- Stop the reaction and read color at 450 nm. Quantitate results.

Cross-reactivity Pattern

Cross-reactivity of the Abraxis Sulfamethoxazole ELISA expressed as (%). The concentration of a compound required to displace 50% (50% B/Bo) divided by the concentration of sulfamethaxozole required to displace 50% X 100.

Compound	LDD (ppb)	50% B/B0 (ppb)	Cross-Reactivity (%)
Sulfamethoxazole	0.015	0.255	100
Sulfamethoxypyridazine	0.020	0.146	175
Sulfachloropyridazine	0.019	0.180	142
Sulfadimethoxine	0.016	0.420	61
Sulfamethizole	0.116	2.50	10
Sulfasalazine	0.450	7.90	3.2
Sulfapyridine	0.365	7.60	3.4
Sulfameter	0.068	12.0	2.1
Sulfaquinoxaline	0.130	26.5	1.0
Sulfadiazine	6.80	120	0.2
Sulfacetamide	31	250	0.1
Sulfamerazine	11.8	580	<0.1
Sulfaguanidine	51	1010	<0.1
Sulfabenzamine	73	1750	<0.1
Sulfamethazine	135	7600	<0.1

Kit Format

Sulfamethoxazole Microtiter Plate (96T) PN 522003

Related Products

Sulfamethazine Magnetic Particle (100T) PN 515001

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