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Product no **AS13 2739**

Glyphosate

Product information

Immunogen BSA-conjugated Glyphosate (coupled via EDAC/NHS) , Target: Glyphosate, CAS no,: 1071-83-6 from SIGMA,

Host Chicken

Clonality Polyclonal

Purity Total IgY. Purified by PEG precipitation.

Format Liquid

Quantity 1 ml (at 5 mg/ml)

Storage Store at 4°C up to one month or in aliquots at -20°C for long time storage. Avoid repeated freezing and thawing. For long term storage purposes in solution the addition of sodium azide at 0.02 % is advised with the appropriate precautions of use.

Additional information Antibody is provided in 0,01M PBS, pH 7,2. Composition of PBS: 8 mM Na2HPO4; 2 mM KH2PO4, 137 mM NaCl; 2,68 mM KCl.

For coating OVA-glyphosate or KLH-glyphosate can be used.

Application information

Recommended dilution 1 : 2000 (ELISA)

Additional information

Table 1. Extraction of glyphosate, AMPA and glufosinate

a) Tap water				
Compound	Sample (µg/L)	Fraction 1 (µg/L)	Fraction 2 (µg/L)	Fraction 3 (µg/L)
Glyphosate	0.67	< 0,08	< 0,07	0,45
AMPA	0,18	0,09	0,11	< 0.05
Glufosinate	1,24	0,23	0.81	< 0.05
b) Surface water				
Compound	Sample	Fraction 1	Fraction 2	Fraction 3
Glyphosate	0.60	< 0,07	< 0.07	0.57
AMPA	1.97	1,46	0.91	< 0.11
Glufosinate	0.12	< 0.10	< 0.10	< 0.10

Legend: Fraction 1 = flow through; fraction 2 = washing; fraction 3 = eluate; target compounds were added to tap water or surface water, applied onto the IAC column and eluted using 20 % MeOH, 0.1 M HCl, pH 1, als eluent.

This antibody was used to prepare anti-glyphosate immunoaffinity column which showed to be very specific and retained glyphosate but not AMPA or glufosinate. Recover of glyphosate was ca. 100 %.

The antibody is applicable for any type of (waste) water sample. The detection limit is 2,5 µg/l, while the end concentration is 100 µg/l. The standard curve runs from 5 – 100 µg/l. For an optimal ELISA result it is crucial to use Greiner high affinity plates; As assay buffer 0,1M PBS, 1% BSA heat-treated, pH 7,4 is recommended.

Selected references

Majer-Baranyi et al. (2023). Application of Highly Sensitive Immunosensor Based on Optical Waveguide Light-Mode Spectroscopy (OWLS) Technique for the Detection of the Herbicide Active Ingredient Glyphosate. Biosensors (Basel). 2023 Jul 29;13(8):771. doi: 10.3390/bios13080771.
Vestri et al. (2021). LSPR immuno-sensing based on iso-Y nanopillars for highly sensitive and specific imidacloprid detection. J Mater Chem B. 2021 Nov 17;9(44):9153-9161. doi: 10.1039/d1tb01344k. PMID: 34694310.
Viirlaid et al. (2019). Immunoassay for rapid on-site detection of glyphosate herbicide. Environ Monit Assess. 2019 Jul 24;191(8):507. doi: 10.1007/s10661-019-7657-z.