

**Prod. no. V01013403**  
**Product Description**  
**Medaka Vitellogenin**  
**ELISA Kit**

**Detection of the egg yolk protein vitellogenin (Vtg)** in juvenile and male fish is a simple and sensitive biomarker for endocrine disrupting chemicals (EDCs) with estrogenic effects in fish. Measuring Vtg has become accepted as a routine screening test for estrogenic effects of EDCs in fish. This quantitative Vtg Enzyme-Linked Immunosorbent Assay (ELISA) can easily be combined with standard fish tests according to OECD Guidelines for Testing of Chemicals.



MEDAKA (PHOTO: J.K. EIDEM)

**The quantitative Medaka Vtg ELISA Kit** is developed for the popular small OECD test species, used in many ecotoxicological testing laboratories throughout the world, the Japanese medaka (*Oryzias latipes*). The assay is optimised for analysis of whole body homogenate samples, but can also be used for other sample types (e.g. blood plasma and liver homogenates).

**The analysis is based on a sandwich assay** utilizing specific binding between antibodies and Vtg. Microtiter plates are **pre-coated** with a Vtg-specific capture antibody, which binds to Vtg in samples added to the wells. Unbound components are washed out, and a different Vtg-specific antibody (detecting antibody) is added, creating a sandwich of antibodies and Vtg. Unbound detecting antibody is washed out, and an enzyme-labelled secondary antibody is added. After a last wash, the enzyme activity is determined by adding a substrate which gives a coloured product. The enzyme activity (colour intensity) is directly proportional to the concentration of Vtg in the sample, and the assay is calibrated using purified Vtg from medaka as standard.

**SINGLE-LAB VALIDATION STUDY**

**Selectivity (matrix effect)**

No response at minimum dilution = 1:25 (plasma, LH & WBH)

**Calibration and working range**

Linear range 0.1-12.5 ng/ml; 125-fold (n=15 standard curves)

Within-day repeatability precision (%CV): 25 %

Between-day repeatability precision (%CV): 27 %

**Accuracy (Recovery)**

74% (samples frozen and thawed once)

100% (freshly spiked samples)

**Limit of Detection (LoD), Limit of Quantification (LoQ)**

LoD 0.008 (NSB-corrected absorbance) = 0.05 ng/ml

LoQ 0.024 (NSB-corrected absorbance) = 0.13 ng/ml

**Sample LoQ (= LOQ x necessary minimum matrix dilution)**

WBH 3.25 ng/ml (1:25)

**Precision**

Within-day repeatability precision (%CV): 9.5 %

Between-day repeatability precision (%CV): 21 %

**Ruggedness**

Out of the tested parameters only decreasing the number of washes before development had notable effects (change >10%) on quantification of Vtg in spiked samples.

**Comparison with existing methods:**

This Biosense Medaka ELISA kit (Prod. No. V01013403) was run in parallel with the "old" Biosense Medaka Vtg ELISA kit (Prod. No. V01013402) and a "Medaka Vtg ELISA system" from another supplier. Results with spiked samples:

	Biosense V01013403	Biosense V01013402	Competitor Kit
Working range:	0.2-12.5 ng/ml	0.20-6.25 ng/ml	1.56-50 ng/ml
Recovery 0.2 ng/ml*)	88-107%	15-81%	<w.r.
Recovery 1.0 ng/ml*)	80-94%	60-84%	<w.r.
Recovery 5.0 ng/ml*)	79-96%	64-83%	74-107%

\*) sample blanks (plasma, LH and WBH, all diluted 1:100) spiked with Biosense Vtg standard

**The Medaka Vtg ELISA Kit comes in two sizes**, with 96 and 480 wells (1 and 5 plates).

[www.biosense.com](http://www.biosense.com)

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