

# Electronic Supplementary Information

## Urine survivin (BIRC5) bioluminescence-based immunoassay

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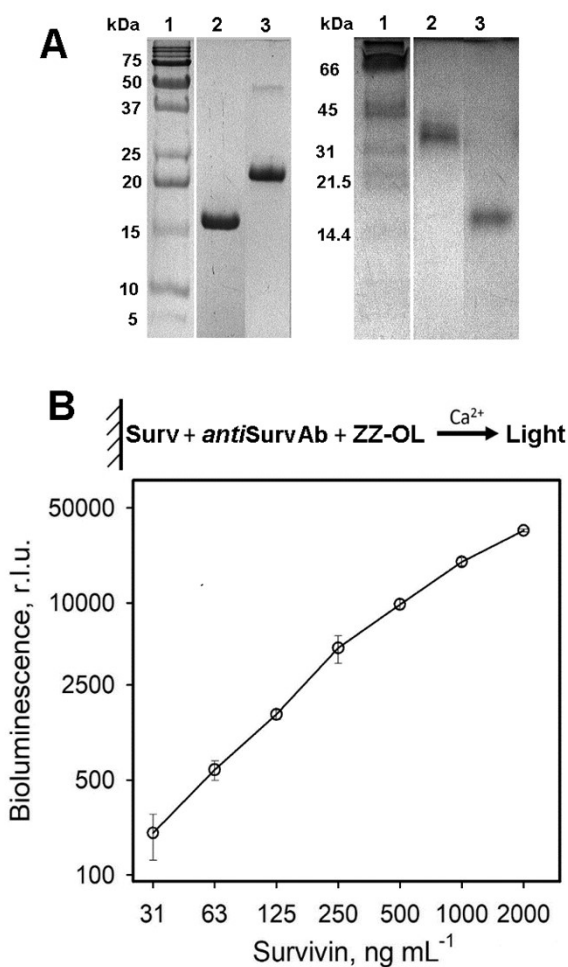


Fig. S1. A) 12.5% PAA gel electrophoresis analysis of the obtained recombinant survivin under denaturation (left) and non-denaturation conditions (right). 1 – standard proteins sample; 2 – survivin; 3 – photoprotein obelin (22.2 kDa).

B) Solid-phase bioluminescence assay of survivin (Surv) binding by *antiSurv* monoclonal antibody (*antiSurvAb*, Cloud Clone, USA). N=3.

Survivin of different concentrations (100  $\mu\text{L}$  per well, PBS, pH 7.0) was adsorbed on the plate surface. After washing and blocking (0.1 % BSA, the same buffer), the solution of *antiSurvAb* (100  $\mu\text{L}$  per well, 3  $\mu\text{g mL}^{-1}$  PBS, pH 7.0) was placed into the wells, incubated for 1 h at room temperature, then washed. The solution of hybrid protein ZZ with photoprotein obelin (ZZ-OL)<sup>1</sup> in 20 mmol L<sup>-1</sup> TrisHCl pH 7.0, 5 mmol L<sup>-1</sup> was placed into the wells, incubated for 1h and washed thereafter. Bioluminescence of the complexes, formed on the surface was measured right after CaCl<sub>2</sub> addition (0.1 mol L<sup>-1</sup>, 50 mol L<sup>-1</sup> Tris HCl, pH 8.8).

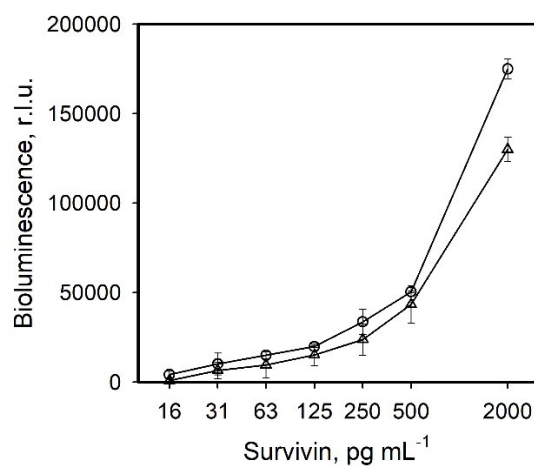


Fig. S2. Microtiter-based sandwich-type bioluminescent immunoassay of survivin in the standard samples of urine (-Δ-, calibrator diluent RD5-33, R&D Systems, USA), or in the urine of healthy patient (-○-), performed with *antiSurvAb-NLuc*. Each point is the average  $\pm 1$  SD ( $n = 3$ ).

## Reference

1. V. V. Krasitskaya, E. E. Bashmakova, A. N. Kudryavtsev, M. A. Vorobyeva, E. A. Shatunova, L. A. Frank. The hybrid protein ZZ-OL as an analytical tool for biotechnology research. *Rus. J. Bioorgan. Chem.*, 2020, 46(6), 1004–1010.