

ECOTOXICITY TESTING OF CHEMICALS AND ENVIRONMENTAL SAMPLES

Service target groups:

- Chemical industry
- Enterprises that pose a risk of environmental contamination

- 30-min bioluminescence inhibition test with marine bacterium *Vibrio fischeri* (ISO 11348-3:2007 and ISO 21338:2010).
- 72-hour growth inhibition test with freshwater microalgae *Raphidocelis subcapitata* (OECD 201).
- Tests with freshwater crustacean *Daphnia magna*:
 - 48-hour acute toxicity test (OECD 202)
 - 21-day chronic toxicity test (OECD 211).
- 7-day growth inhibition test with freshwater plant *Lemna minor* (common duckweed) (OECD 221).
- 3-day terrestrial plant test for seedling emergence and early growth with higher plants *Sorghum saccharatum*, *Lepidium sativum* and *Sinapis alba* (OECD 208).

PHYSICO-CHEMICAL CHARACTERISATION OF NANOMATERIALS

Service target groups:

- Research and development partners
- Academic collaborators

Hydrodynamic size and surface charge measurements of nanoparticle suspensions.

Method: instrument Malvern Zetasizer.

QUANTIFICATION OF METALS

Service target groups:

- Research and development partners
- Assessors of environmental pollution

Method: total X-ray fluorescence spectroscopy (TXRF) that enables fast quantitative and semiquantitative analysis of the samples.

ANTIMICROBIAL EFFICIENCY AND SAFETY EVALUATION OF CHEMICALS

Service target groups:

- Research and development partners
- Chemical and material industry

Antimicrobial efficiency testing of chemicals by the growth inhibition of microbes in suspension assays (ISO 20776-1:2019, ISO 20776-1 and EURL ECVAM DB-ALM Protocol No. 33).

Test organisms: *Bacillus subtilis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Candida albicans*, *Saccharomyces cerevisiae*, *Staphylococcus aureus*.

- Bacterial reverse mutation assay (Ames test, OECD 471).

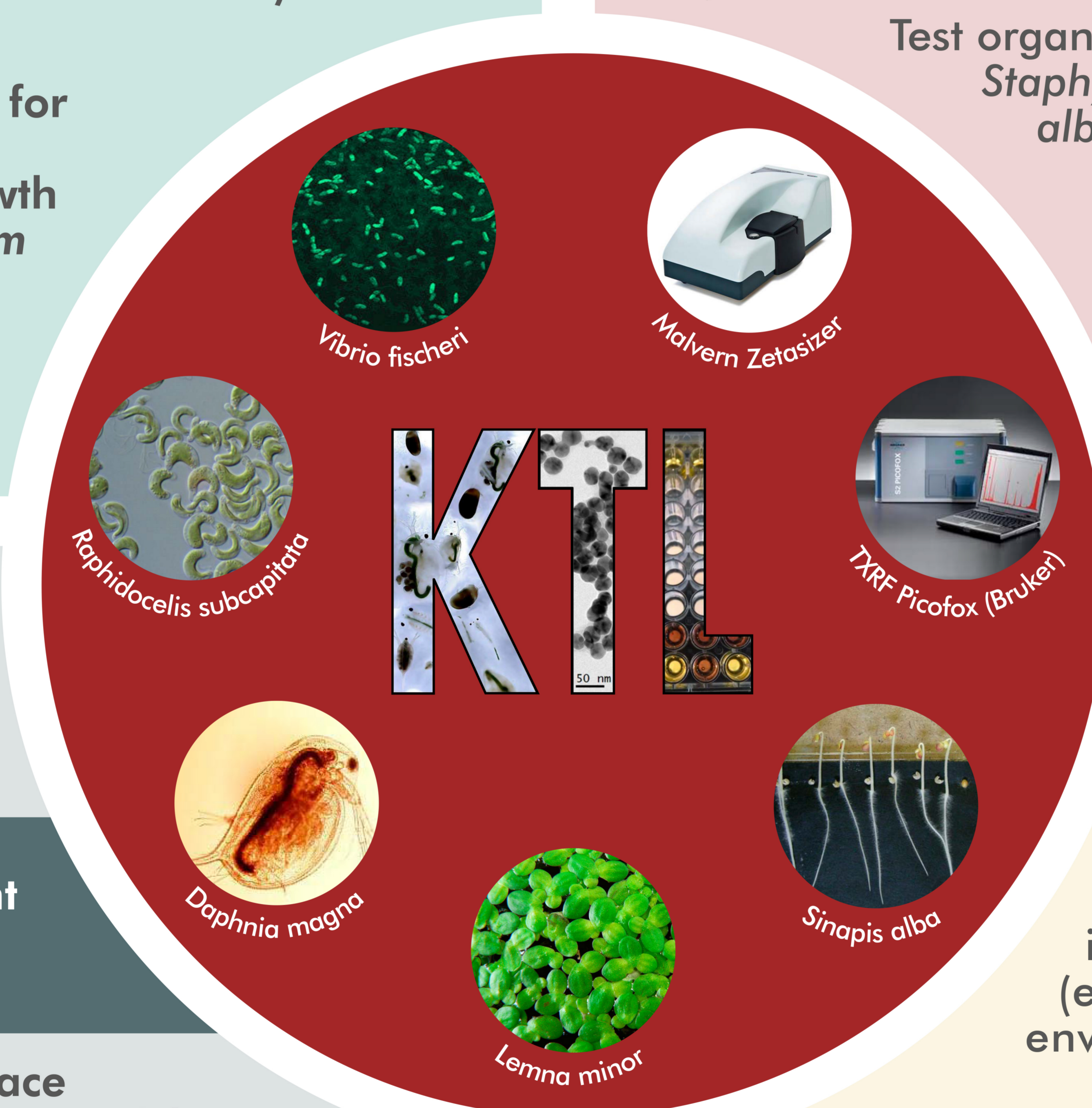
Assessment of mutagenicity of chemicals with *Salmonella typhimurium* TA98 and TA100 strains.

Measurement of antimicrobial activity of surfaces (ISO 27447 and ISO 22196).

Test organisms: *Escherichia coli*, *Staphylococcus aureus*, *Candida albicans*.

Toxicity testing of chemicals with mammalian cell lines *in vitro*.

Cell lines: A549, Caco-2, THP-1 Balb/c3T3, HaCaT.



NICPB LABORATORY OF ENVIRONMENTAL TOXICOLOGY:

- Holds the key competence in Estonia for evaluating the (eco) toxicity of chemicals and environmental samples.

- Biotests are conducted in compliance with the OECD and/or ISO standards. The GLP (good laboratory practice) principles are followed.

- Scientific excellence: in 2018 three members of the laboratory (Anne Kahru, Angela Ivask and Kaja Kasemets) and in 2019 one member of the laboratory (A. Kahru) belonged to the list of 1% highly cited researchers (Clarivate Analytics).



Additional
information via
web link

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