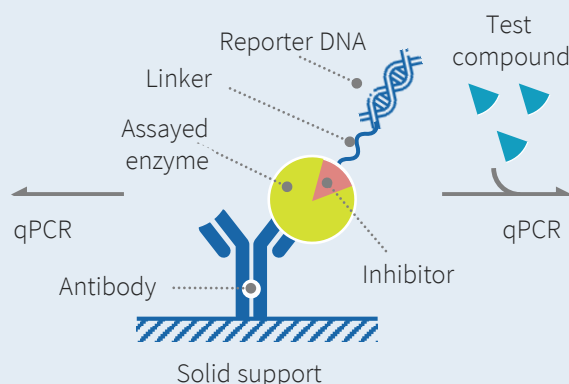
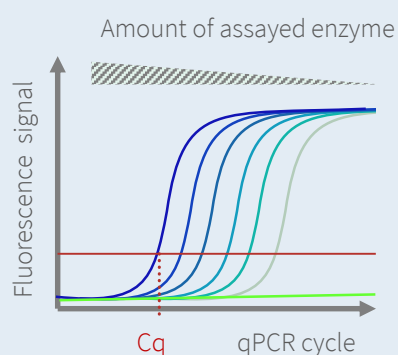


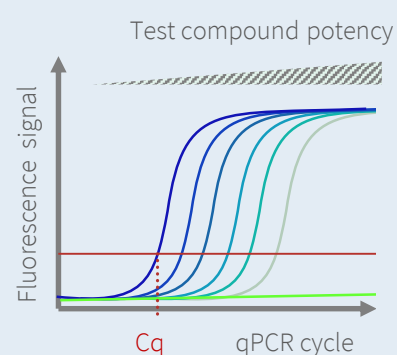
THE TECHNOLOGY: **DIANA assay**

DIANA (The DNA-linked Inhibitor ANTibody Assay) is a novel proprietary technology for **ultrasensitive enzyme quantification** and for **high throughput screening** of enzyme inhibitors. It works in a multi-well plate format and can be used also for other proteins, such as **receptors** or **transporters**, or even for **small molecules**.

DIANA for enzyme detection



DIANA for inhibitor screening



For enzyme detection/quantification, the target is captured by an immobilized antibody, probed with a small-molecule inhibitor attached to a reporter DNA, and subsequently detected by quantitative PCR. In the screening setup, the assay is used to quantify the inhibition potency of other compounds via incubating the enzyme with the probe in their presence. DNA-linked substrates or ligands can also be used as probes for enzymes, receptors or transporters.

ULTRASENSITIVE ENZYME DETECTION (*in vitro* diagnostics)

- **Ultrasensitive:** zeptomolar (10^{-21} mol) amounts of targets can be detected
- **Selective:** targets quantified in biological matrices (blood serum, urine, cell lysate, CSF)
- **Quantitative:** broad linear range of up to six orders of magnitude
- **Detection of enzymes, receptors and small molecules possible**
- **Suitable for replacement of radioactivity based assays (RIA)**

Features	DIANA	ELISA
Biological matrices	✓	✓
No interfering antibodies	✓	✗
Detects only active enzyme	✓	✗
Sample requirement	≤ 1 µl	100 µl
Dynamic range	6-logs	3-logs
Sensitivity in blood (mol)	1×10^{-20}	1×10^{-17}

HIGH THROUGHPUT SCREENING (drug discovery)

- **Suitable also for screening of enzyme inhibitors, receptor ligands and protein-protein interaction inhibitors (PPIs)**
- **Minimal target requirements:**
 - low amounts of target needed for screening
 - no need of recombinant or purified target
- **Robust:** signal-to-noise ratio of several logs ($Z' > 0.9$; $CV < 5\%$)
- **Quantitative Output:** inhibition potency accurately determined from a single-well measurement
- **Sensitive & Selective:** high sensitivity in hit discovery with ultra-low false positive and false negative rates, pooling possible

Assay window	Up to 6-logs
Assay format	384-well plates
Reagent volume	≤ 5 µl
Pooling of compounds	5-20/well
Throughput (per day)	>100,000

COMING SOON: HIGH THROUGHPUT ADME-Tox (drug discovery)

- **Most standard ADME-Tox tests in development in DIANA-based format:** solubility, stability in blood plasma and liver microsomes, protein binding, membrane permeability and cytochrome P450 inhibition
- Can be used also for target engagement in tissues for *in vivo* PK

THE COMPANY: **DIANA Biotechnologies**

R&D focused biotech firm developing products and services for diagnostics and drug discovery. Established as a **spin-off** of the **IOCB Prague**, a top-class research institute with a strong track record in drug discovery (e.g. Tenofovir marketed by Gilead), backed with a strong **venture capital funding**. Granted exclusive global **license to the DIANA technology IP**.

PRODUCTS & SERVICES

Diagnostics	Detection kits for quantification of targets in clinical samples	<ul style="list-style-type: none">• Easy to use kits with pre-coated assay plates, detection probe and buffers• Works with standard lab equipment and any qPCR cyclers
	Quantification of targets in clinical samples – as a service	<ul style="list-style-type: none">• Provided in house with favorable pricing and short turn-around times• Available for a growing catalogue of targets and range of clinical samples
High Throughput Screening	HTS screening facility services	<ul style="list-style-type: none">• Screening of “in-house” >100,000 compound library or third party libraries• Short delivery times, possible ADME-tox or medical chemistry follow-ups
	HTS screening kits	<ul style="list-style-type: none">• Pre-coated 384-well plates with target protein, probe, buffers and standards• Easy to implement at any standard screening facility
	Selectivity profiling panels (kit format or as a service)	<ul style="list-style-type: none">• Quantitative output, differentiating affinity of closely related isoforms• E.g. carbonic anhydrases panel
Other services	Custom assay development (both detection and screening formats)	<ul style="list-style-type: none">• Lead time ~3 months, high success rates even for difficult targets• Minimal performance criteria and risk-sharing models possible
	ADME-Tox testing (<i>in development</i>)	<ul style="list-style-type: none">• Most standard ADME-Tox tests in DIANA-based format• Typically as HTS project follow-up
	Lead compound optimization	<ul style="list-style-type: none">• Expertise in organic synthesis and medical chemistry• Typically as HTS project follow-up or collaborative projects

Selected projects also run on a collaborative bases (cost & IP sharing) or as parts of R&D consortia

GROWING CATALOGUE OF TARGETS: Enzymes and Receptors

Application panels	Targets
Oncology	Glutamate carboxypeptidase II (GCPII, PSMA), Fibroblast activating protein (FAP), Carbonic Anhydrases IX and XII (CAIX and CAXII)
Neurology	Glutamate carboxypeptidase II (GCPII, PSMA) and III (GCPIII)
Energy metabolism	Fibroblast activating protein (FAP), Insulin receptor (INS-R)
Steroid Metabolism	Hydroxysteroid dehydrogenase 17 beta 1 (HSD17b1), steroid receptors (<i>in development</i>)
Influenza targets	Neuraminidase N1, PA-PB1 polymerase interaction, PB2 cap binding protein
Carbonic anhydrases	Selectivity profiling on panel of human Carbonic anhydrases
Kinases	Kinase panel for selectivity profiling (<i>in development</i>)
Methyltransferases	S-Ado-Met transferases (<i>in development</i>)
On demand targets	Assay can be developed on demand to majority of relevant protein targets

DIANA Biotechnologies s.r.o.

Nad Safinou II 366
252 50 Vestec
Czech Republic

www.dianabiotech.com
info@dianabiotech.com
+420 212 247 340
+420 608 371 211

