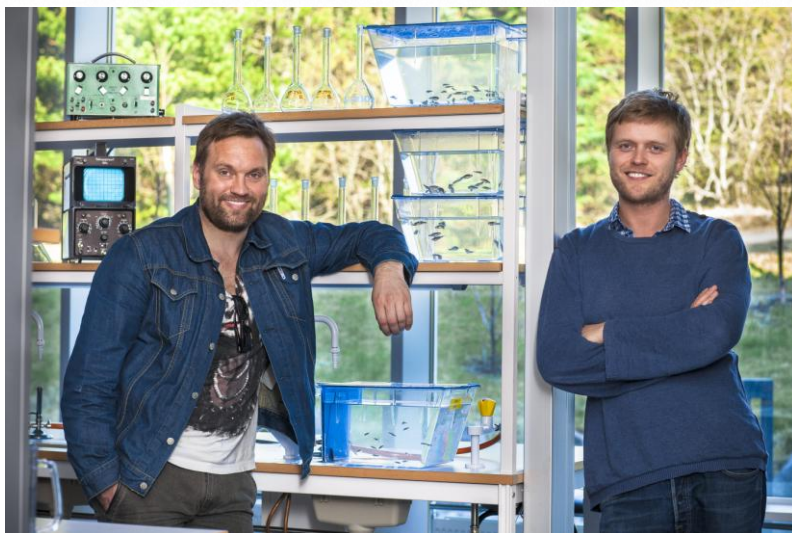




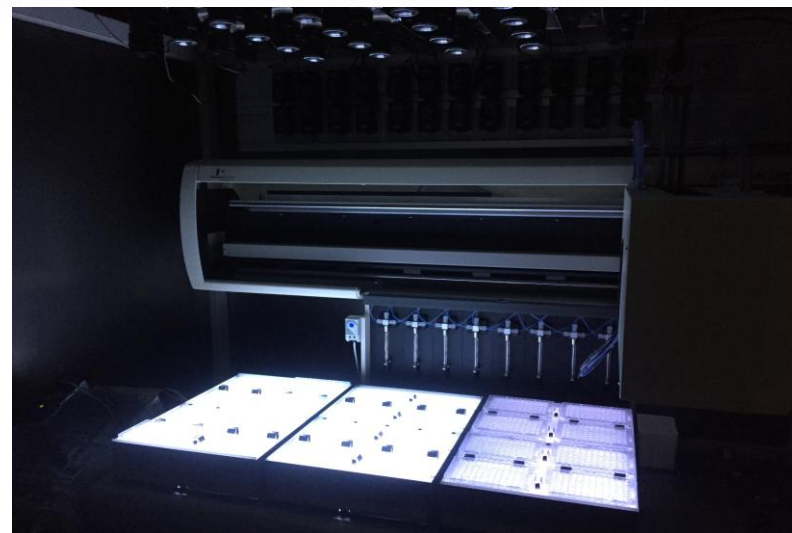
3Z Pharmaceuticals
Reykjavik
Iceland

CNS DISCOVERY SERVICES

3Z PHARMACEUTICALS
MENNTAVEGUR 1
101 REYKJAVIK • ICELAND



3Z is a preclinical CRO providing pharmaceutical companies with high throughput screening in an **in vivo** setting.

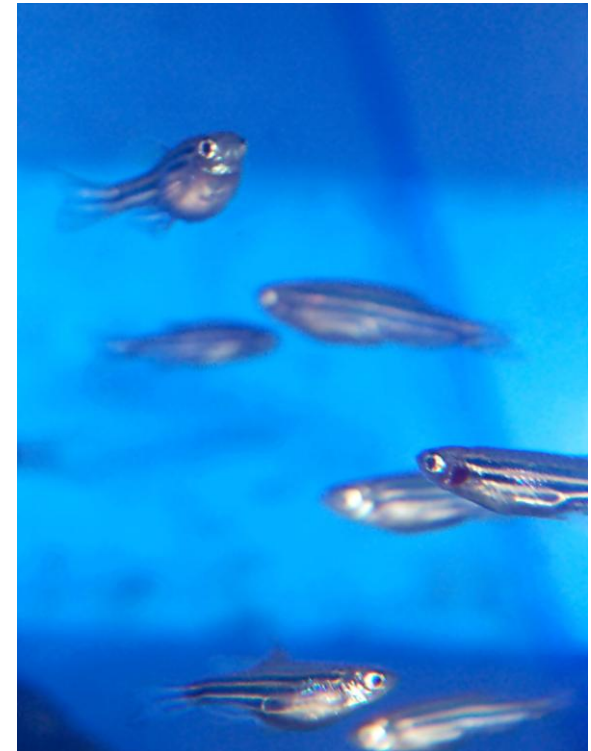
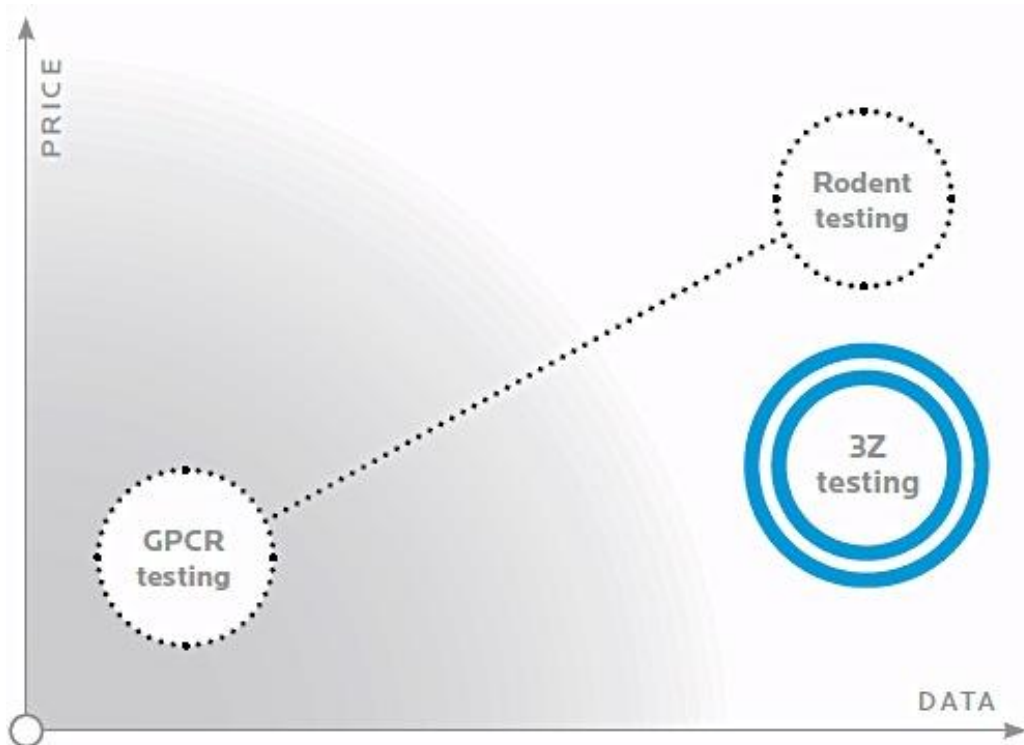


Zebrafish larvae are monitored using custom-built analytical software, significantly **reducing the cost and time** of drug discovery.

COMPANY OVERVIEW



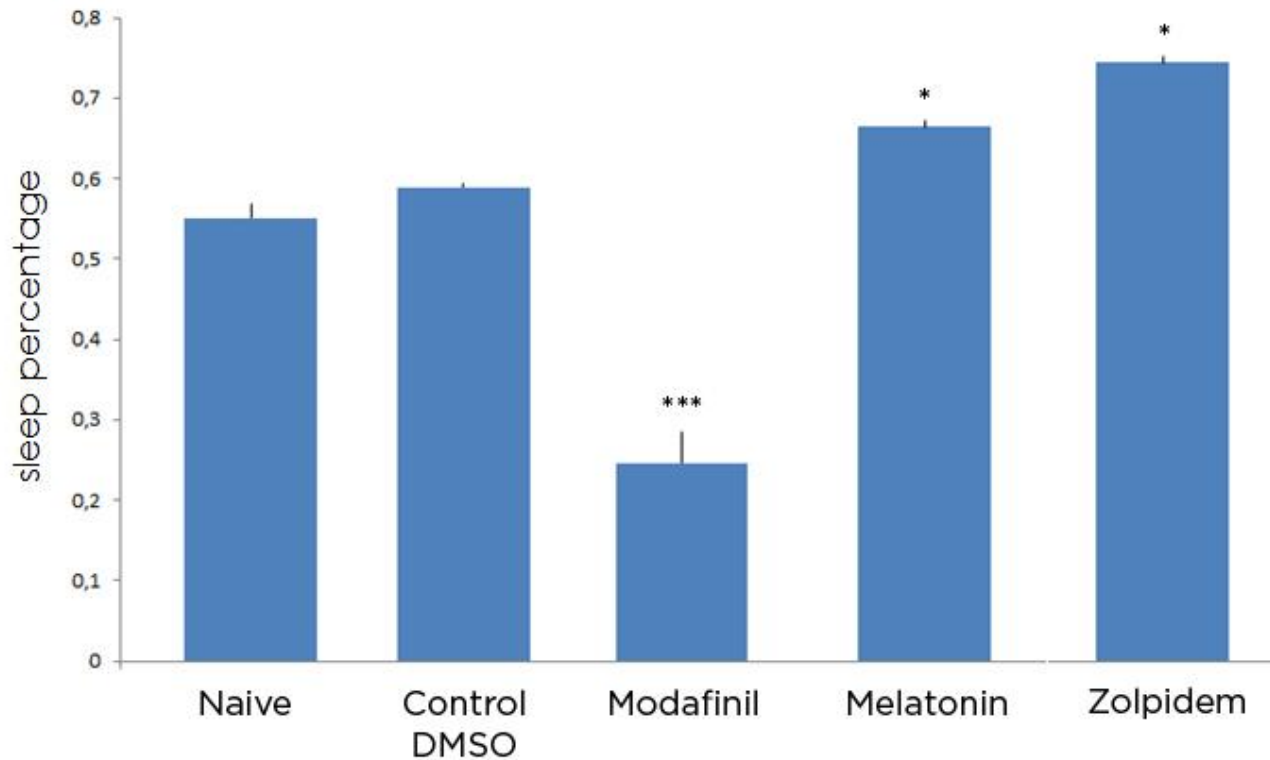
Our protocols combine the cost efficiency of *in vitro* testing with the high information content of *in vivo* testing.



ZEBRAFISH SLEEP MODEL



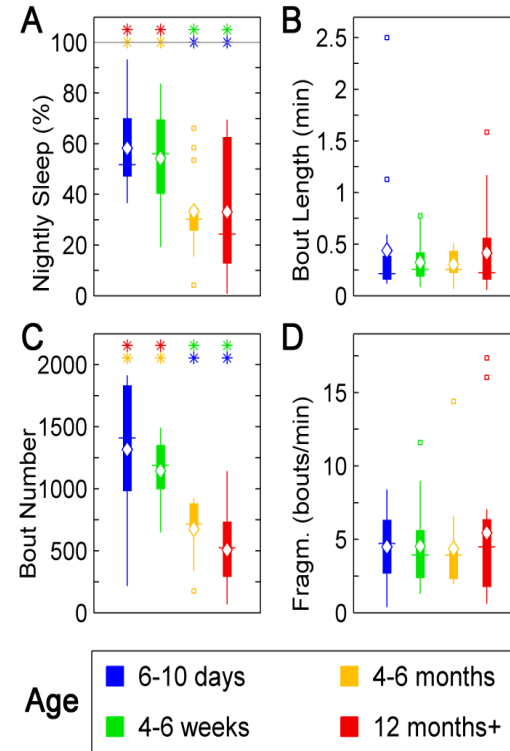
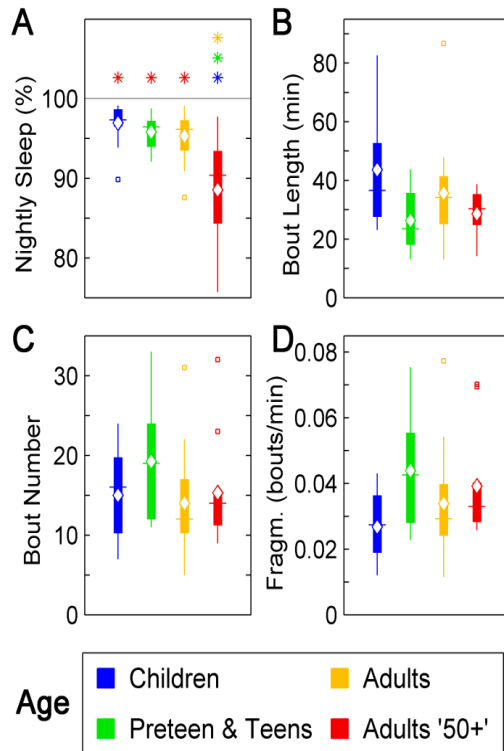
Effects of selected sleep-active compounds. Zebrafish exhibit the same behavioral phenotype as humans effects as do humans.



SLEEP: HUMAN VS. ZEBRAFISH



Sleep-wake cycles exhibit similar developmental trajectories



Sorribes et al., Front Neural Circuits, 7:178, 2013

SLEEP – WAKE SCREENING



FOR DETECTING SLEEP / WAKE PROMOTING PROPERTIES OF CANDIDATE COMPOUNDS

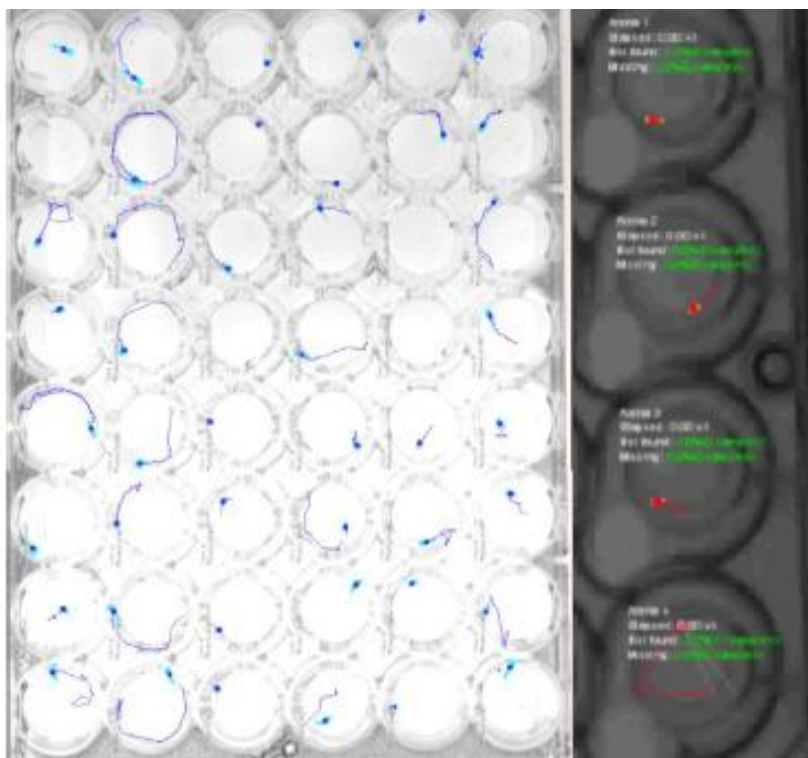


- System utilizes a custom-built fertilized egg collector, robotic loader, microfluidics dispenser, and analysis software.
- In stepwise fashion: 1) collection of the fertilized embryos 2) incubation for 120 hours 3) placement in 96 well-plates.
- A light- and temperature-controlled recording apparatus houses 24 plates, each plate with an individual camera.
- After a 24-hour acclimation period, drugs are dispensed and the behavior recorded for 24 hours.

SLEEP – WAKE SCREENING



KEY PARAMETERS USED TO IDENTIFY LEAD COMPOUNDS



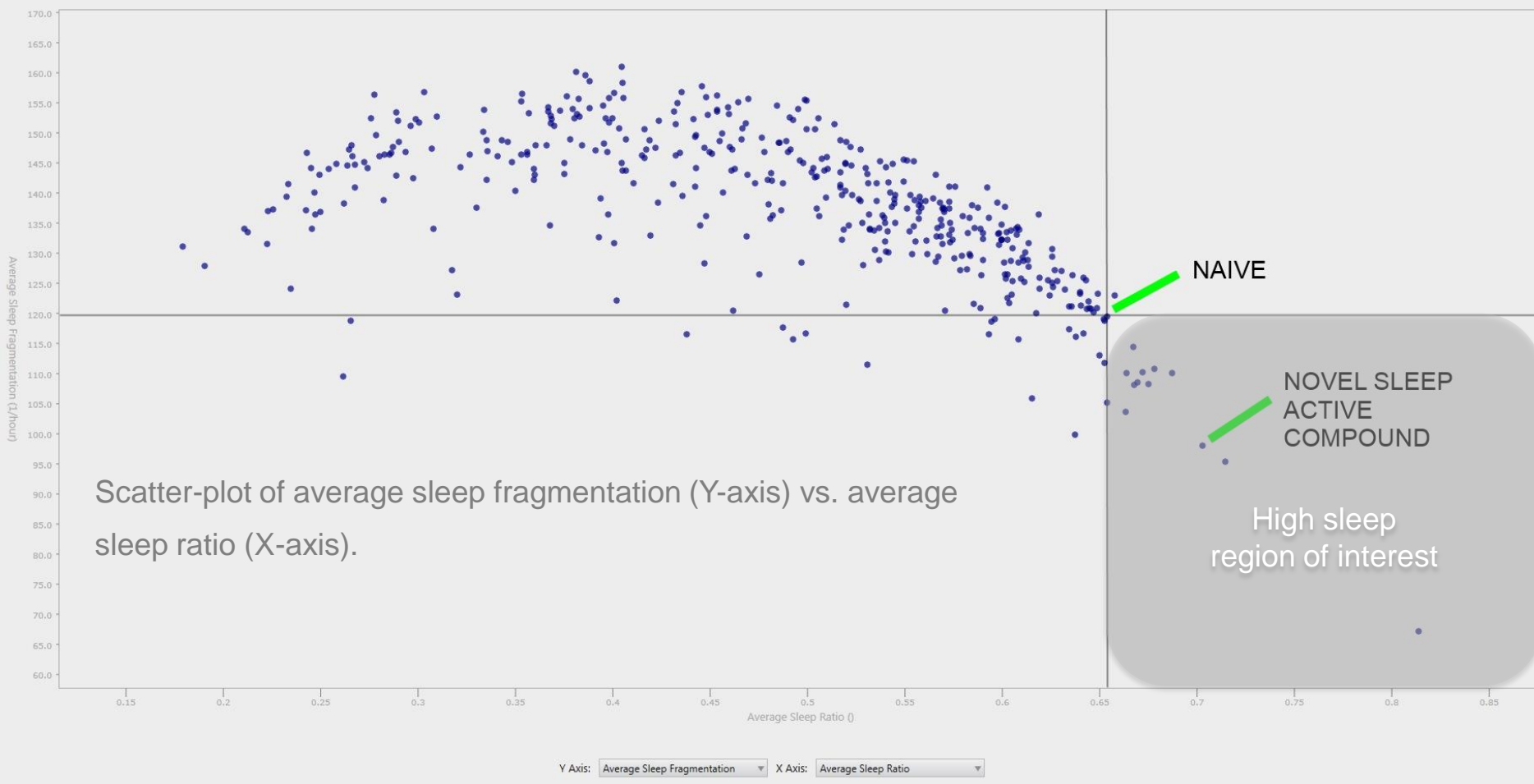
Sleep fragmentation: number of awakenings per hour

Sleep ratio: percentage of time spent asleep during lights-off

Sleep latency: duration from lights-off to first sleep bout

Sleep bout length: length of sleep bouts during lights-off

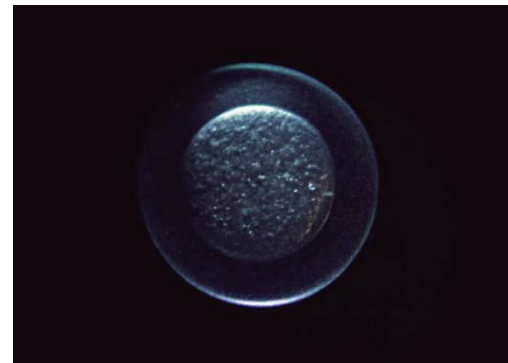
SCREENING DATA – 180 CASEIN KINASE INHIBITORS

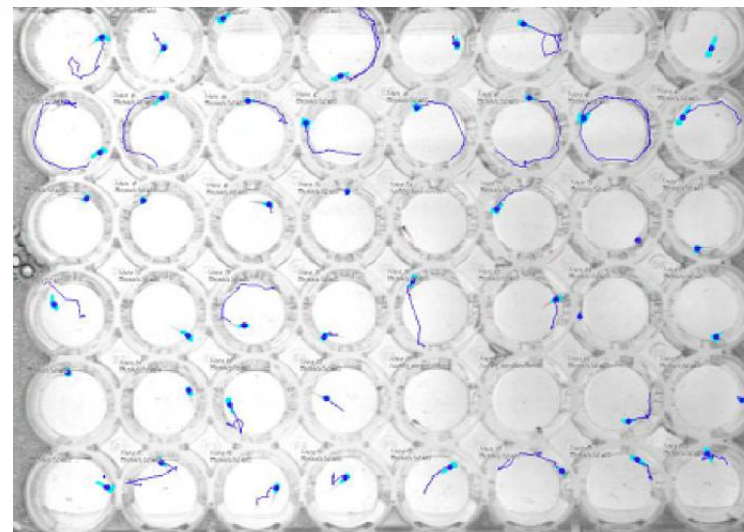


SERVICES



- Approximately 100 compounds tested per week, servicing screening projects of up to 10,000 compounds; expected throughput to reach 600 compounds per week.
- Behaviorally-based screen yields numerous parameters for each compound: sleep percentage, sleep fragmentation, bout distribution, average swim velocity, total activity.
- Customers receive a concise overview of the effects of each compound enabled by a user-friendly interface.





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