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Smart Microscopy Platforms For Efficient In Vivo Small Molecule Screens

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Modern robotic microscopy platforms (High content screening platforms) are ideal instruments for large scale genome studies. The image based read outs often generate 10s of TByte data sets per single experiment. 10.000s of experiments are waiting to be done in the next years in hundreds of labs worldwide. Besides cell based assays, transgenic model organism like zebrafish or drosophila allow more detailed HCS studies in vivo in 4D, opening an entire new field of large scale research.

We present a cutting edge technology overview including in vivo compound screening strategies for pharmaceutically relevant readouts (e.g. inflammatory effects and parkinson model systems) and discuss the data challenge and solutions.

Next Generation robotic microscopes offer a huge potential for efficient life science research but require novel screening technologies for higher throughput approaches. Novel microscope types, easy to use data storage systems, high speed data processing, data integration, 4D visualization, search engine technologies for distributed data sinks will be the challenge for Next-Generation-High-Content-Screening.

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References:

J Vis Exp. 2012 Jul 16;(65):e4203. doi: 10.3791/4203.

Biotechniques <http://www.ncbi.nlm.nih.gov/pubmed/21548893>. 2011 May;50(5):319-24. doi: 10.2144/000113669

Nat Methods. 2011 Mar;8(3):246-9. doi: 10.1038/nmeth.1558. Epub 2011 Jan 23

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