

MEMO

**Short report on the Training School 8-10 May 2023, Fraunhofer Institute
ITMP, Hamburg, Germany**

**“Drug discovery against parasitic vector borne diseases in-vitro assays
development and screening in drug discovery”.**

In the frame of:

**COST Action CA21111 One Health Drug Against parasitic vector Borne
Diseases in Europe and Beyond**

“OneHealthDrugs”

Following the intensive program prepared by Dr Sheraz Gul, for Cost Action 21111 Training School at Fraunhofer ITMP from 8 to 10 May 2023 we proceeded. The first day of the training school started with the lecturing part “Introduction Section on the Drug screening and Discovery”, presented by Dr. Sheraz Gul. He gave an insight about the drug discovery processes and gave an in depth explanation about drug discovery focussing on drug screening. The lecturing encouraged questions and answers and led to vivid discussion about the different strengths and limitations concerning High Throughput Screens. Each participant made a short introduction about themselves mentioning their backgrounds and expertise, as well as their research interests. The second lecture was delivered by Prof. Paola Costi about “New Challenges in Drug Discovery: Discovery and Development of Low Environmental Impacts

Drugs”. She gave an idea of the GREENER explanation of drugs life cycles, starting from manufacturing and ending by humans and animal consumption, and their environmental impact on water, soil, air, etc. There were many interactions during the theoretical part, from the side of the participants and the lecturer kept the discussions alive through interactive sessions. Furthermore, several protocols of assays, like HDAC-Glo™ Class 2 Assays and CellTiter-Glo® 2.0 Assays were explained by Dr. Gul. Concerning the practical work and lab demonstration, a lab tour and demo was delivered by Dr. Oliver Keminer. The second day, started with lectures going into details and pitfalls during drug development by Dr. Gul and during the second part of the day, all the three groups of four participant each went separately performing the above mentioned assays on potential Drug candidates. During the third day all the participants gave a longer presentation in power-point for what they were currently working for in their respective country/institutions, and how they could integrate their own work with the purpose of the training school. The training school ended with presentations on the learned techniques and the results from the hands-on.

Workshop – Cost Action 21111 at Fraunhofer

ITMP

May 8-10 , 2023
Hamburg- Germany





STEM-CELL BASED ASSAYS

D

Undifferentiated hESCs on matrigel

DAY 0: 6000 single cells per well on matrigel

48hrs

DAY 2: Exposure to Compounds

120hrs

DAY 7: Staining + Automated Imaging

Signal Intensity: 4-394

Marker Intensity: Hoechst

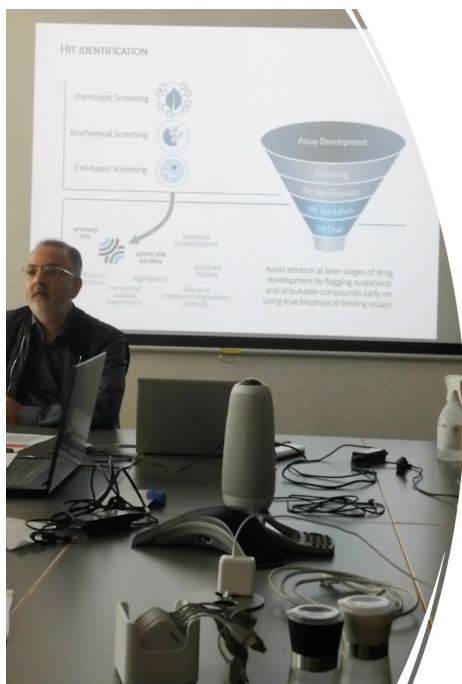
89 out of 2,800 compounds

- 24 not tested
- 65 tested
 - 22 confirmed
 - 4 activators
 - 10 inhibitors
 - 8 cytotoxic
 - 43 no effect

Cell

High-Throughput Screening Assay for the Identification of Compounds Regulating Self-Renewal and Differentiation in Human Embryonic Stem Cells

Cell Stem Cell 2, 603-612, June 2008



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