

IonWorks™ HT: High Throughput Patch Clamp Electrophysiology for Drug Discovery

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In order to assess the functional interaction of chemical entities with ion channel activity directly, patch clamp electrophysiology is performed. Over the years, this technique has become the gold standard for assessing ion channel function. However, this technique requires electronic and optical equipment from different vendors, a high degree of operator skills, is not automated, and is laborious. Furthermore, this conventional technique does not have the potential to be significantly automated and scaled-up. Today, a skilled patch clamp electrophysiologist will perform 5-15 patches per day, 3-4 days/week.

The IonWorks HT system will overcome the major drawbacks to traditional patch clamp techniques. This turn-key system is a highly parallel platform that uses a multi-welled planar substrate and generates whole-cell voltage clamp data with similar fidelity to conventional patch clamp techniques. The IonWorks HT system is capable of generating data from 1000 to 3000 patches/day in whole cell mode. Whole cell data as well as a system description will be presented.