# hERG (Kv11.1) cell line

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|---|---|
| **Channel** | **KV11.1,hERG,IKr** |
| **Assay** | IC50 |
| **Expression system** | HEK293 or CHO |
| **Method** | whole cell patch clamp |
| **Standard time** | 1-2 weeks (<10cpds) |
| **Reference compound** | E4031, cisapride |
| **Target** | QT-prolongation, Torsade de Pointe(TdP) |

## Background

The voltage-gated sodium channel Kv11.1 is encoded by the KCNH2 (hERG) gene. This ion channel is important in determining the timing of the electrical repolarization of the action potential (AP) in ventricular myocytes. Genetic mutations in the hERG channel can result in long QT syndrome, a disorder in which the patient has a substantial risk of sudden death due to an arrhythmia known as Torsades de pointes (TdP).

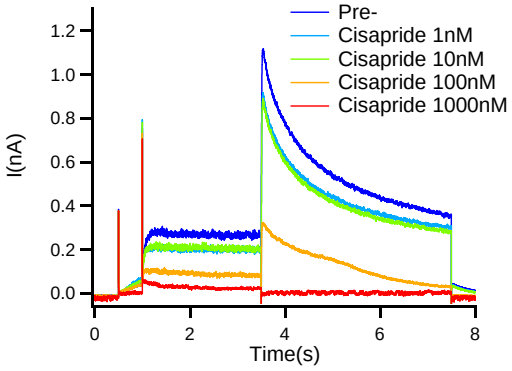


Figure 1. Representative traces of hERG currents, recorded in the absence or presence of cisapride at different concentrations.

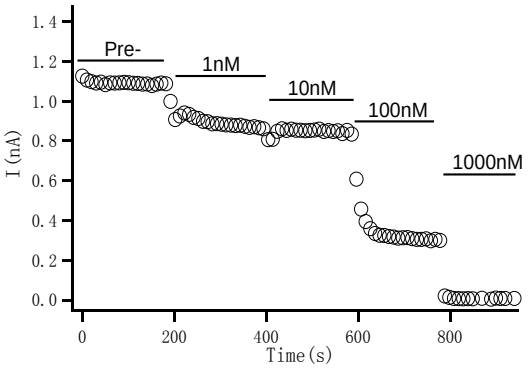


Figure 2. Time course of hERG, in the absence or presence of cisapride at different concentrations

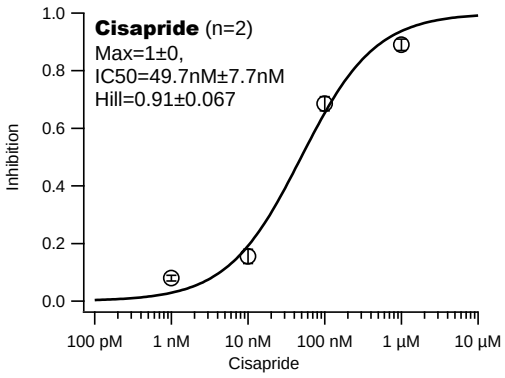


Figure 3. Concentration-dependent effects of cisapride on $I_{hERG}$

*Further validation data available on request.*