

**Burst discharge induced by Kv1 channel antagonists in rat hippocampal slice
- A study using a multi-electrode array and pClamp software**

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The voltage-gated potassium channel Kv1.5 underlies I_{Kur} and has been identified as a target for the treatment of supraventricular arrhythmia. Kv channel members are also expressed throughout the CNS. Existing antagonists that inhibit multiple Kv subfamilies have been shown to increase neuronal action potential duration, produce repetitive neuronal firing and induce epileptiform activity. We used a multichannel multielectrode array (Med 64) on rat hippocampal slices to determine whether novel Kv1.5 antagonists produce similar CNS effects. The effect of drugs on hippocampal burst discharges were recorded in the gap-free mode of Clampex software (Molecular Devices Corporation, CA) and the data analyzed with Clampfit. Although Conductor software can record the same electrical activities, its ability to analyze data was limited. Multielectrode field recordings revealed that 4-aminopyridine and some Kv1.5 antagonists kindled interictal burst discharges that originated from the CA3 region of the hippocampus, in a dose dependent manner. This study illustrates the utility of the MED64 for the detection and localization of altered firing patterns in the hippocampus.