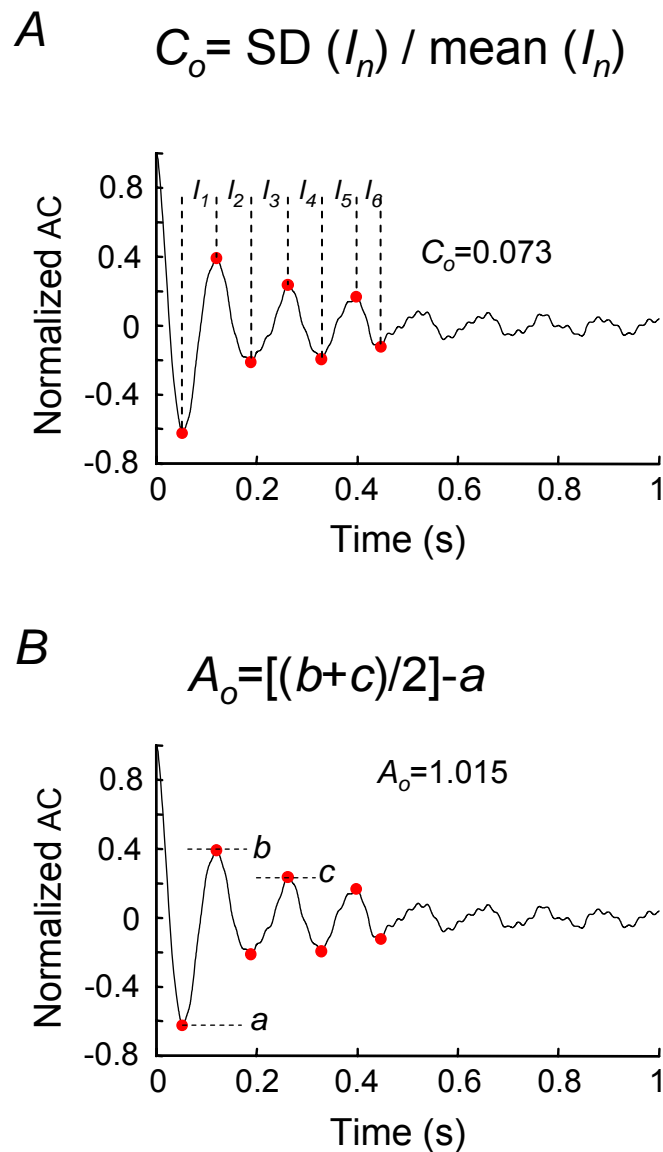


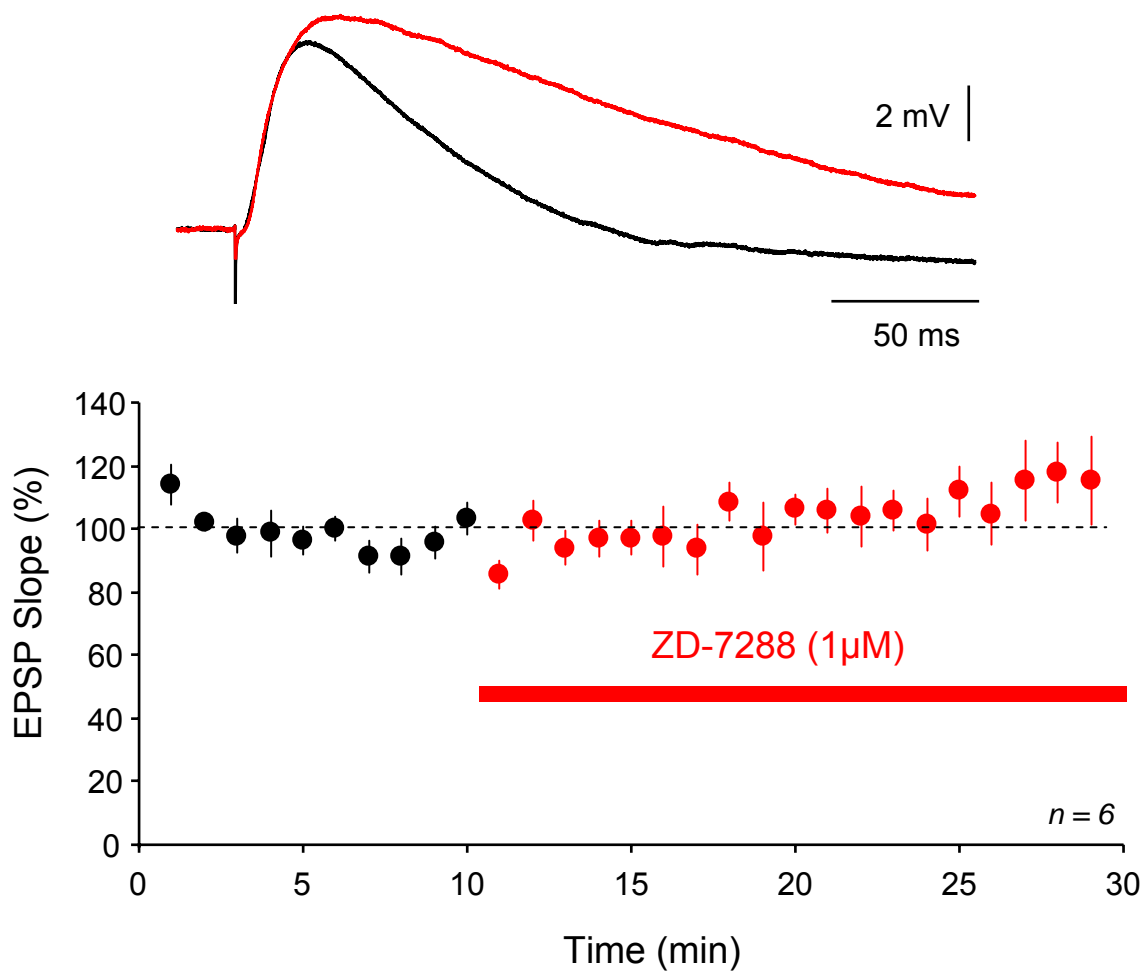
Supplementary Figures

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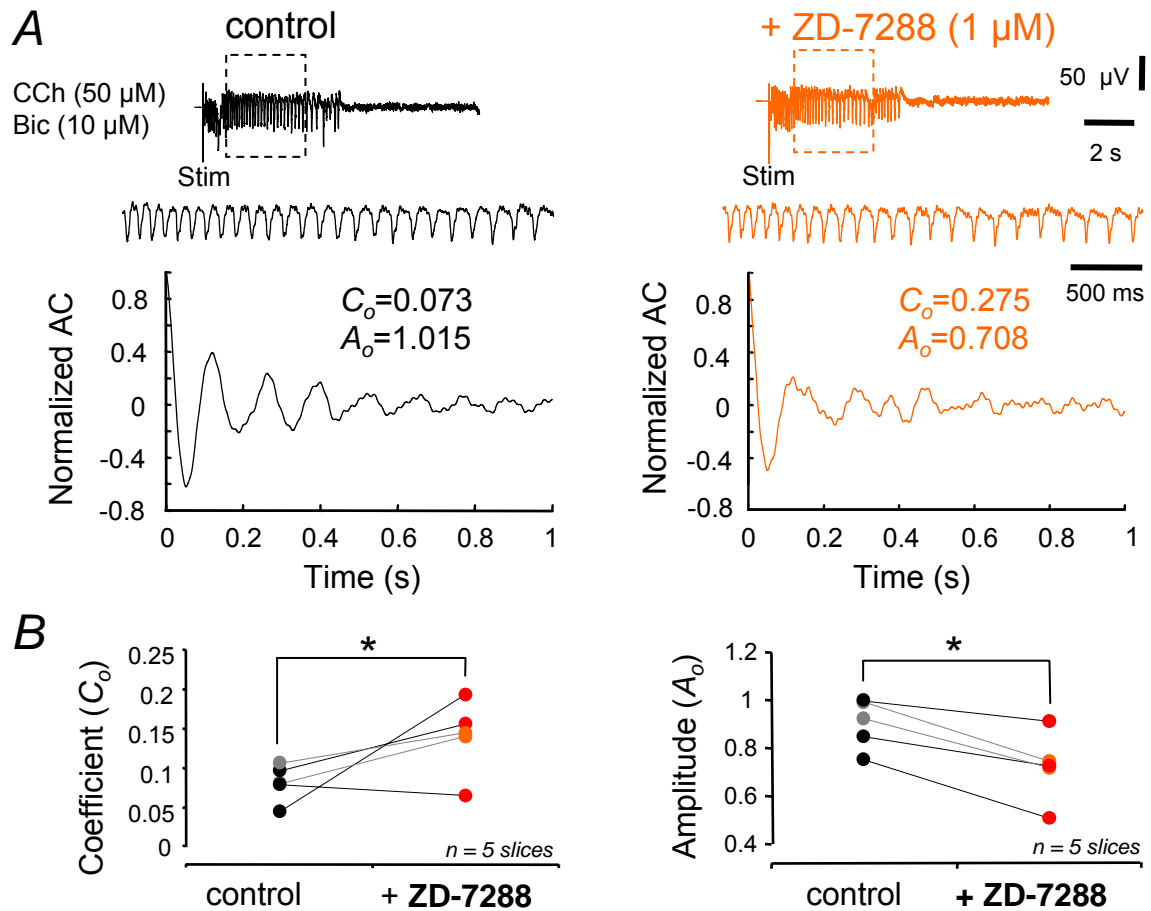
The role of hyperpolarization-activated cationic current (I_h) in spike-time precision and intrinsic resonance in cortical neurons *in vitro*



Supplementary Figure 1. Analysis of the coefficient of oscillation (C_o) and amplitude of oscillation (A_o). **A**, Coefficient of oscillation (C_o). The first 6 extrema were detected on the autocorrelation function and the intervals (from I_1 to I_6) were measured. C_o was calculated as indicated by the equation (SD, standard deviation). In the present example, the oscillation was regular and C_o was small (0.073). **B**, Amplitude of oscillation (A_o). The amplitude was calculated as indicated by the equation. In this example, the oscillation is only slightly attenuated and A_o is large (1.015).



Supplementary Figure 2. Stability of excitatory synaptic transmission recorded in CA1 pyramidal neurons from acute slices. Top, EPSPs recorded in control (black) and in the presence of 1 μ M ZD-7288 (red). Bottom, time-course of the normalized EPSP slope.



Supplementary Figure 3. Evoked θ oscillations in the neocortex. **A**, Field potential was recorded extracellularly in L5 of visual cortical slices and θ oscillations were evoked by electrical stimulation in L2/3 in the presence of 50 μM CCh and 10 μM Bic. Upper traces, evoked θ oscillations. The dashed square represents the analyzed signal (enlarged lower traces). Lower graph, normalized auto-correlation function of the selected signal. In controls (left column), the field potential displayed an oscillation with a high coherence ($C_o=0.073$) and a large amplitude ($A_o=1.015$). In the presence of 1 μM ZD-7288 (right column), the coherence and the amplitude of the oscillation decreased ($C_o=0.275$; $A_o=0.708$). **B**, Effects of ZD-7288 on the coefficient of oscillation (left) and the amplitude of oscillation (right) for spontaneous (black circles) and evoked θ oscillations (grey circles) recorded extracellularly.