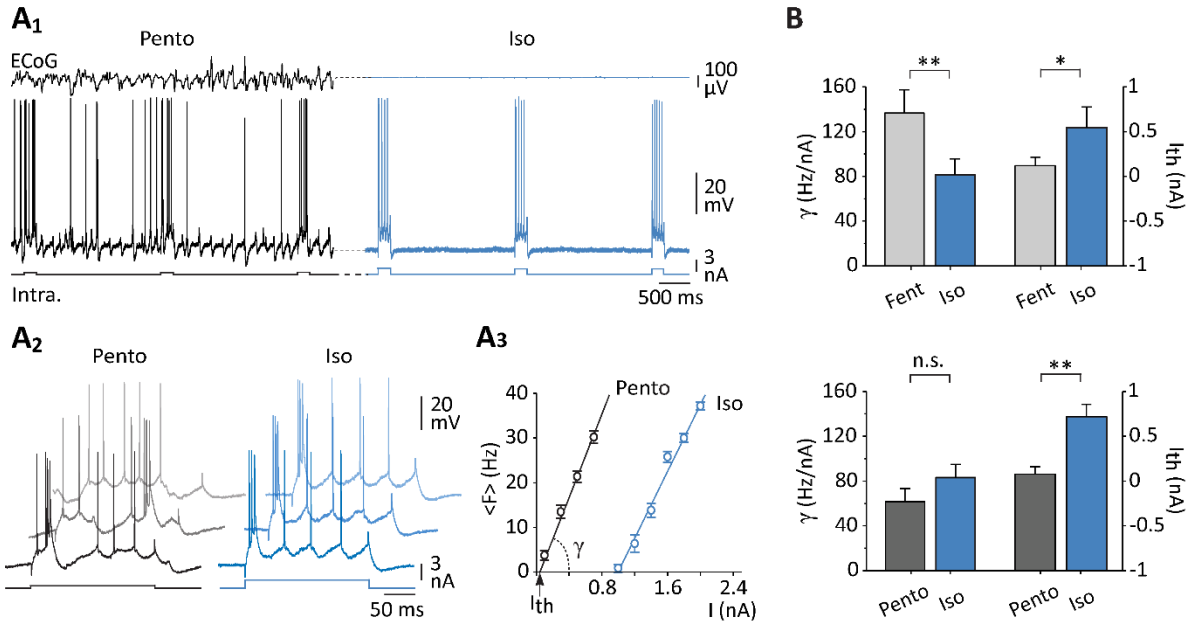
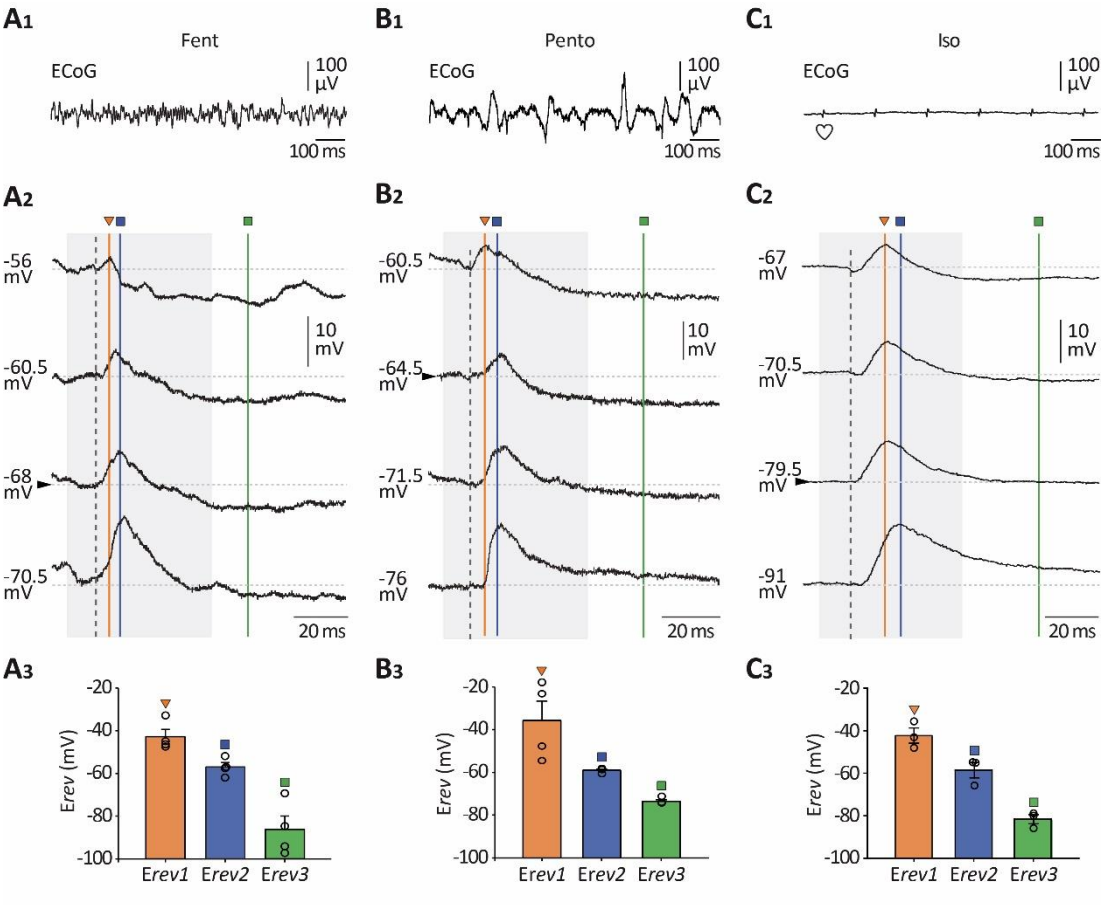


Supplementary Figure 1 Transfer function of rat S1 neurons after suppression of ECoG activity. (**A**) Transfer function of a S1 neuron recorded during control condition and after induction of isoelectric state. (**A1**) Simultaneous recordings of ECoG activity (top records) and neuronal responses (middle records) to current pulses injection (bottom traces), in control state (Pento) and during ECoG suppression (Iso). (**A2**) Expansion of the cell responses shown in (**A1**). (**A3**) *F–I* curves computed from the same neuron, in control (black line) and during isoelectric state (blue line). Each symbol corresponds to the mean (± SEM) firing rate calculated from ≥ 15 successive trials. Note the increase in the current threshold (I_{th}) and the lack of change in the corresponding neuronal gain (γ) when spontaneous ECoG activity was suppressed. (**B**) Summary data comparing γ and I_{th} values in control states (Top, Fent, n = 5 neurons; bottom, Pento, n = 7 neurons) with those measured after abolition of spontaneous brain activity (Iso). *P < 0.05; **P < 0.01; n.s., non-significant. (**A1-3**) are from the same neuron.



Supplementary Figure 2 Different synaptic components of the sensory-evoked response in S1 neurons. (A1, B1, C1) Background ECoG activity characteristic of the fentanyl (Fent), pentobarbital (Pento) and isoelectric (Iso) conditions. Heart symbol indicates the cardiac artefacts visible in the ECoG signal. **(A2, B2, C2)** Typical examples of intracellular synaptic responses to whisker stimulations (20-40 psi, grey boxes) applied at rest (black arrowhead), and from three current-induced levels of membrane polarization (V*m* values are indicated at the left of the records), under fentanyl **(A2)**, pentobarbital **(B1)** and after cessation of synaptic activity **(C2)**. The reversal potentials (E_{rev}) of the different synaptic components were estimated by measuring the amplitude of the cell response at each V*m* level using the baseline V*m* as voltage reference (dashed line). Symbols and solid lines indicate the times at which measurements were made. **(A3, B3, C3)** Pooled data of the mean E_{rev} of each synaptic

component (Fent, n = 4 neurons; Pento, n = 4 neurons; Iso, n = 3 neurons). The initial component (orange triangle) likely reflected an overlapping of excitatory and inhibitory synaptic potentials (E_{rev1}), whereas the later components are presumably $GABA_A$-mediated (blue square) (E_{rev2}), then $GABA_B$-mediated (green square) (E_{rev3}) synaptic responses. Empty circles represent individual experiments.