In this presentation we discuss the results of computer simulations mimicking the effects of reciprocal inhibitory coupling in pairs of neurons. The neurons are connected via metabotropic synapses which incorporate a diffusion mechanism allowing the neurons to interact with one another. We study the case of two different neurons, one tonic (continued spiking at a fixed firing rate) and another bursting (sequences of spikes followed by a period of quiescence), firing at different firing rates and regimes, and analyze the conditions leading one of the neurons to shut down while the other regains its original firing status. The two parameters of interest in here are the time constants for activation and inactivation at the synaptic connection. The study may be of relevance to the dynamical evolution and stability of central pattern generators, which are neuronal networks responsible for vital rhythmic behaviors such as mastication, walking and breathing.