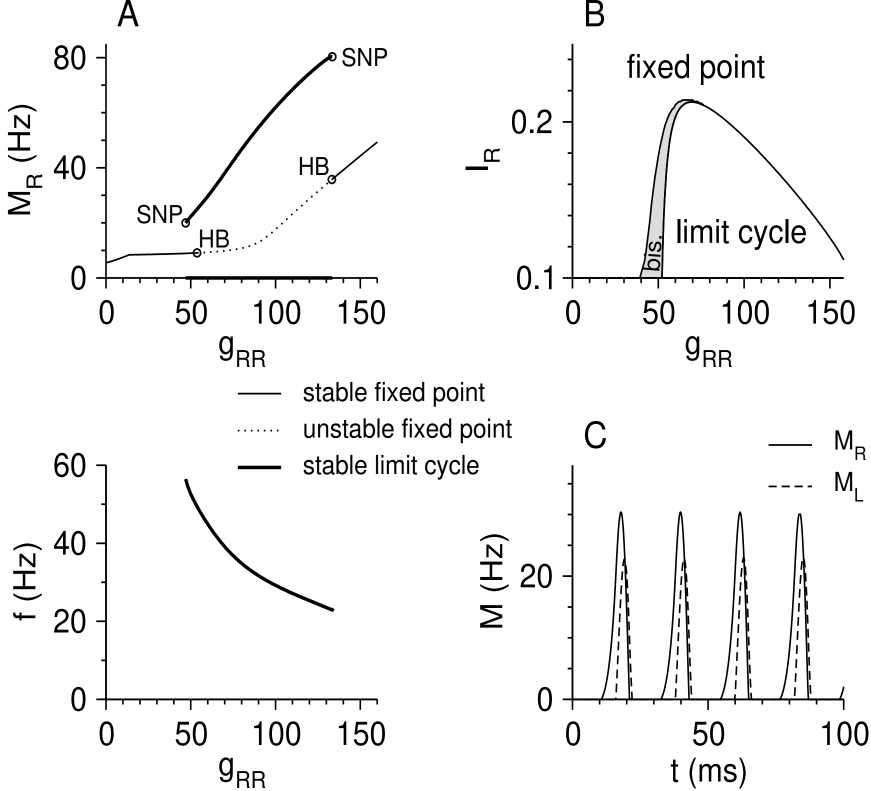

Figure S4. Fast cortical oscillations for large $g_{\rm RR}$.

Additional parameters are $g_{\rm RL} = 35$, $g_{\rm LR} = 7.5$.

(A) Top: bifurcation diagram of the system in the $M_{\rm R}$-$g_{\rm RR}$ plane. Thin solid lines: stable fixed points; thin dotted line: unstable fixed points. Thick solid lines: minimum and maximum of $M_{\rm R}$ on stable limit cycles (periodic states). Open circles denote Hopf (HB) and saddle-node of periodics (SNP) bifurcation points. Bottom: the frequency f of the limit cycle plotted as a function of $g_{\rm RR}$. Additional parameter is $I_{\rm R} = 0.15$.

(B) Phase diagram of the system in the $I_{\rm R}$-$g_{\rm RR}$ plane. The fixed point is a stable state above the outer solid line, and the limit cycle is a stable state below the inner solid line. In the bistable grey area, both states are stable.

(C) Traces of $M_{\rm R}$ (solid line) and $M_{\rm L}$ (dashed line) for $g_{\rm RR} = 60$ and $I_{\rm R} = 0.15$. LTS neurons fire almost exclusively during the periods when RS neuron fire.