Supplementary Material: Sensitivity Coefficients

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1 Sensitivity coefficients and partitioning of reaction parameters

In the following the four sensitivity coefficients $S^{time}, S^{total}, S^{mig}$ and S^{prolif} are shown for each reaction parameter $k_1 - k_{18}^m$. To enable a compact, though still meaningful presentation we partitioned the 31 parameters in three distinct groups. For each parameter group the sensitivity coefficients are shown separately. Parameter group 1 includes the reaction parameters $k_1, k_1^i, k_2, k_3, k_4, k_5, k_6, k_7, k_8, k_9$ and k_{10}. Parameter group 2 contains the reaction parameters $k_{11}^{m1}, k_{11}^{c1}, k_{11}^{m2}, k_{11}^{c2}, k_{12}^i, k_{12}, k_{13}^{m1}, k_{13}^{c1}, k_{13}^{m2}, k_{13}^{c2}$ and k_{14}. The parameters $k_{15}^i, k_{15}, k_{16}, k_{17}^{m1}, k_{17}^{c1}, k_{17}^{m2}, k_{17}^{c2}, k_{18}^m$ and k_{18}^c are embraced in parameter group 3. This parameter division is also shown in Fig. S1.
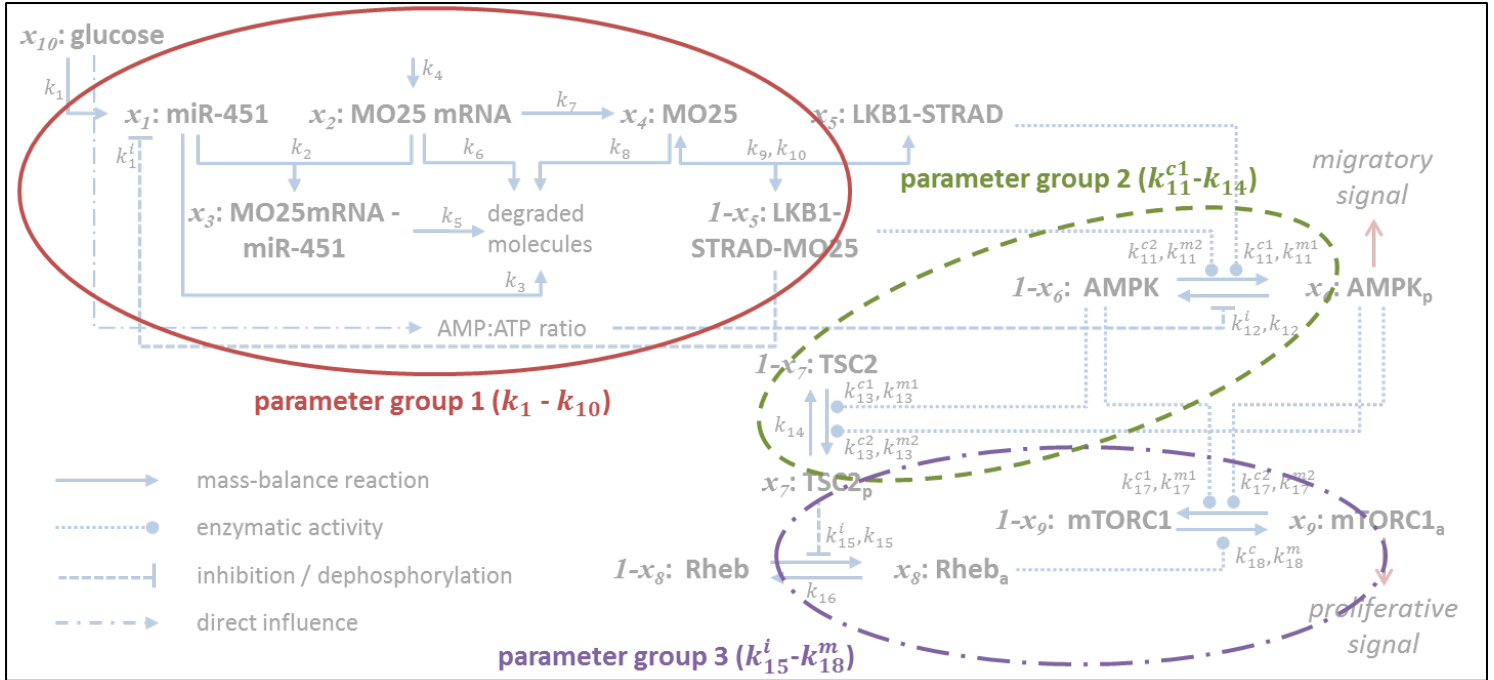

Figure S1: Partitioning of reaction parameters in three disjunct groups.

2 Parameter Overview

In Fig. S2 the sensitivity coefficients for the number of time steps S^{time} is shown for the parameters of parameter group 1. Fig. S3 displays the sensitivity coefficients for the total number of tumor cells in the last time step S^{total} for the first parameter group. Fig. S4 and Fig. S5 summarize the sensitivity coefficients for the number of migrating and proliferating cells in the last time step, S^{mig} and S^{prolif}, respectively.

The results of the sensitivity coefficients $S^{time}, S^{total}, S^{mig}$ and S^{prolif} for the second parameter group are shown in Fig. S6 - S9. The sensitivity coefficients of the parameters that are included in parameter group 3 are presented in Fig. S10 - S13.
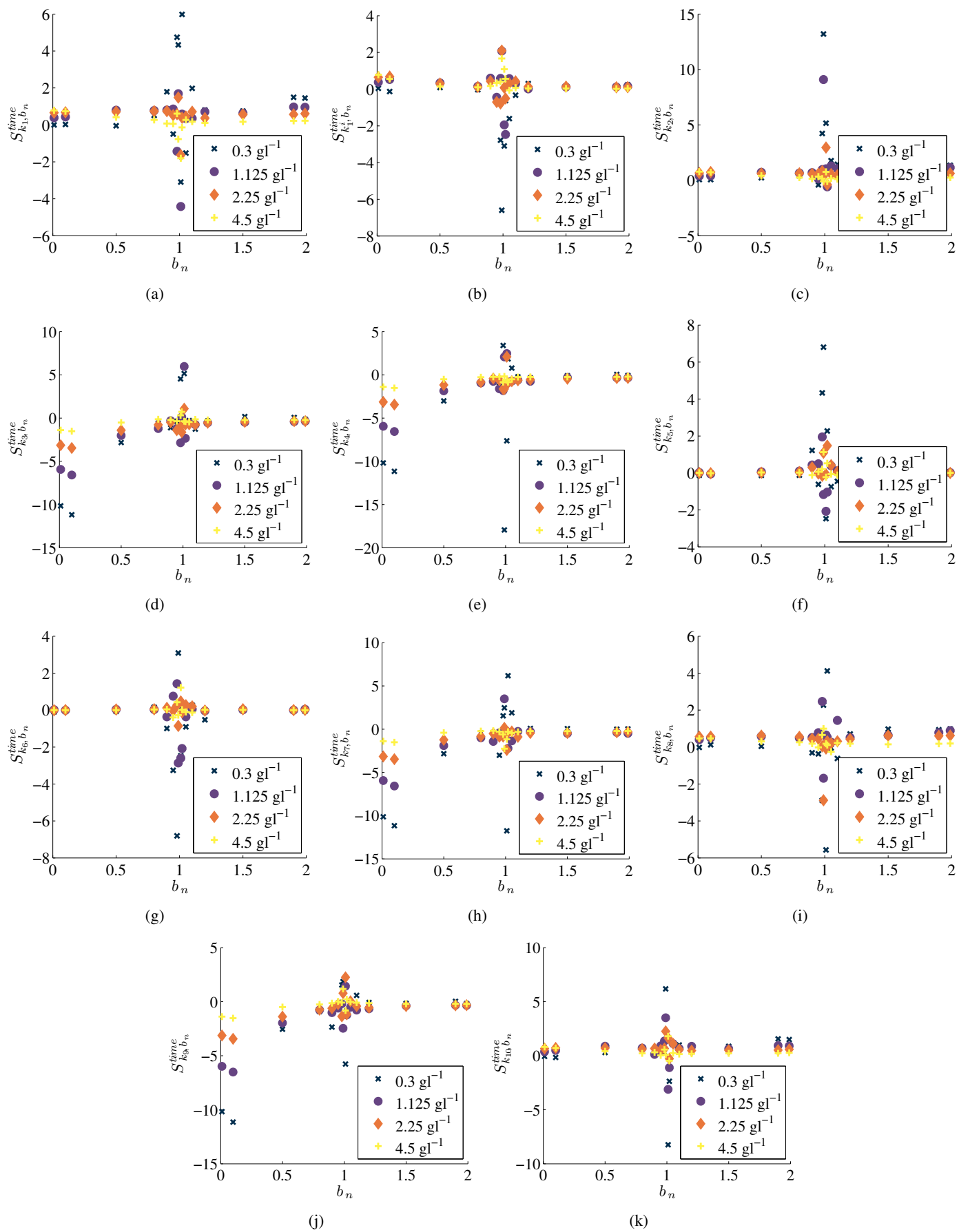
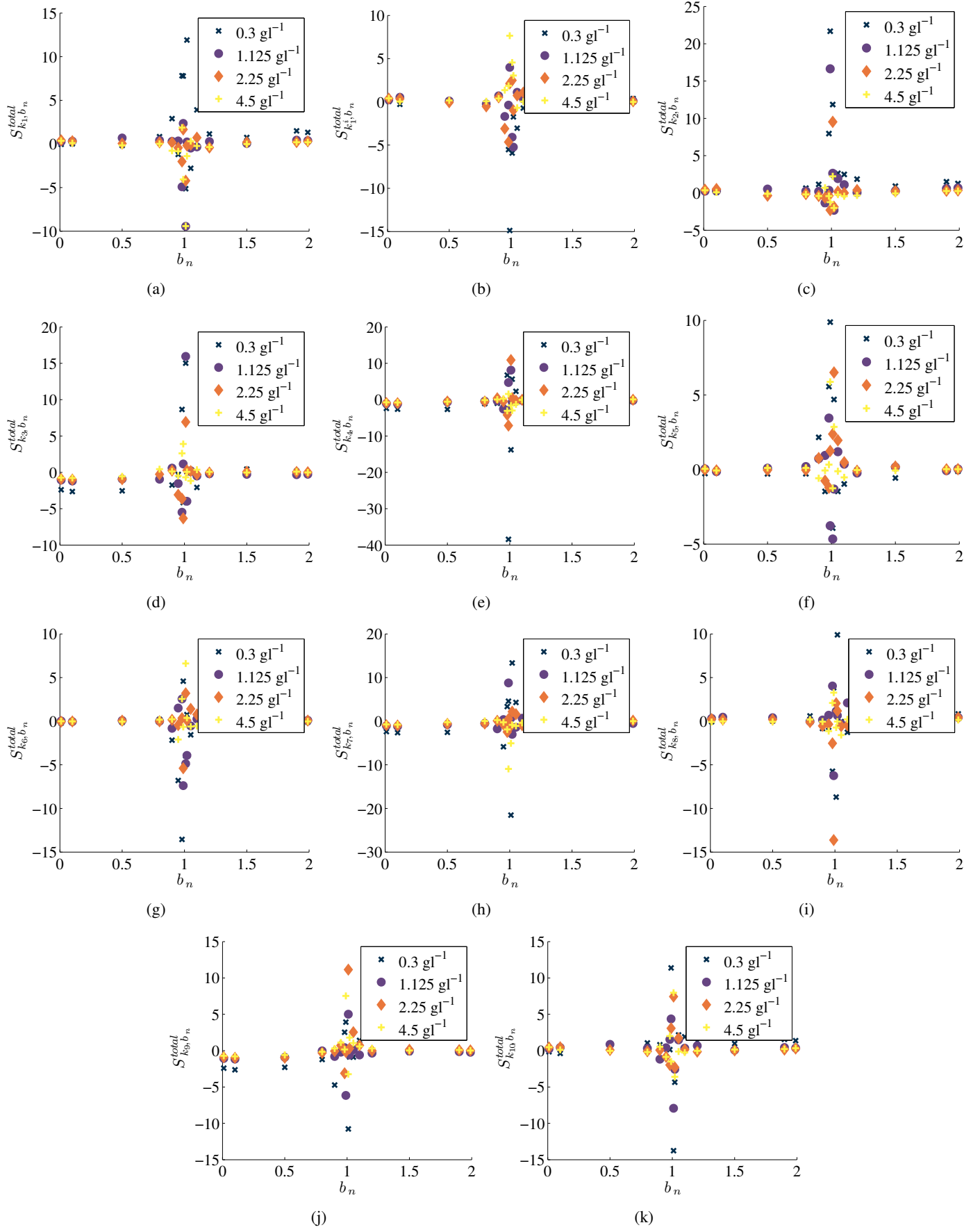Figure S2: S^{time} for all parameters in parameter group 1.

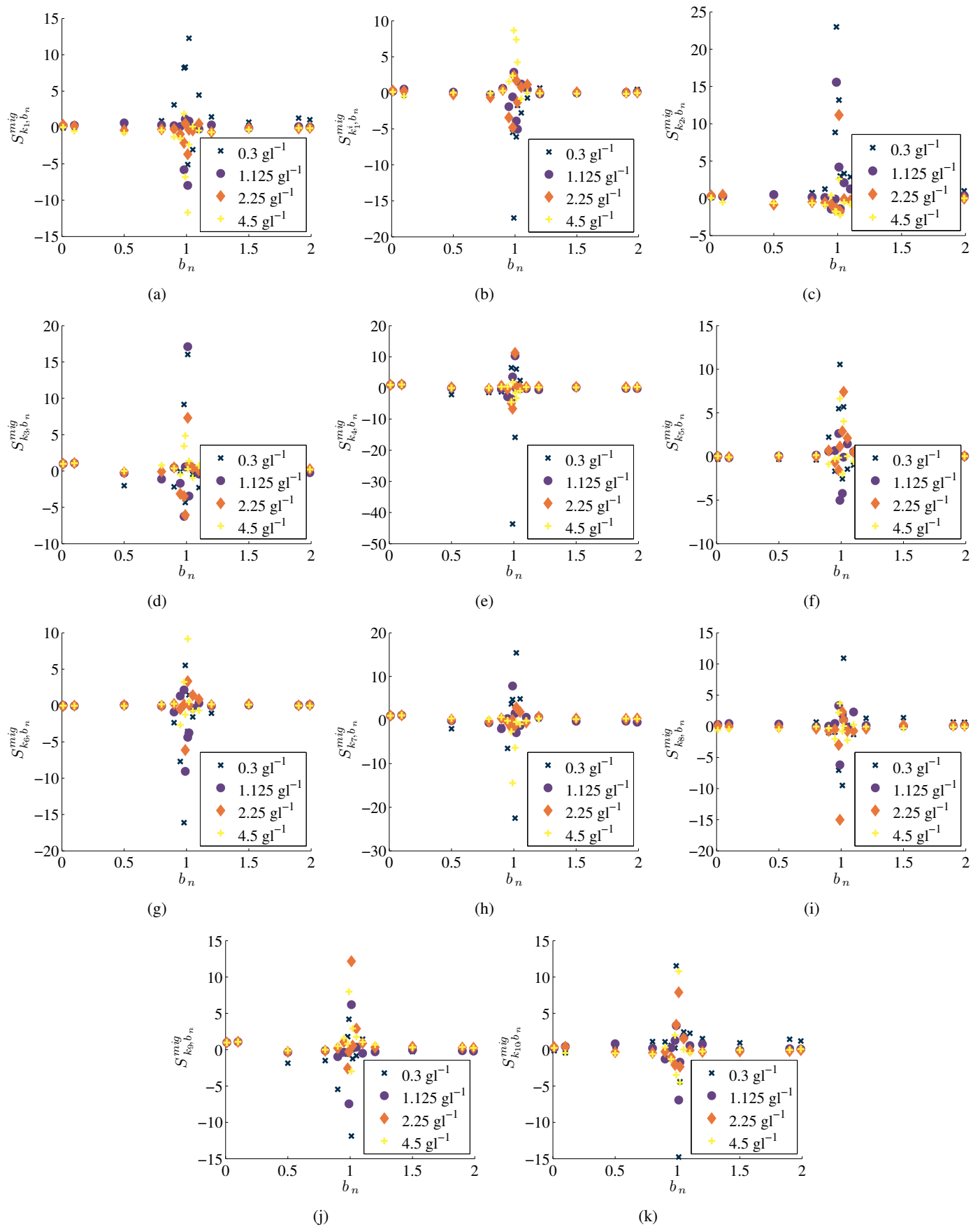Figure S3: S^{total} for all parameters in parameter group 1.

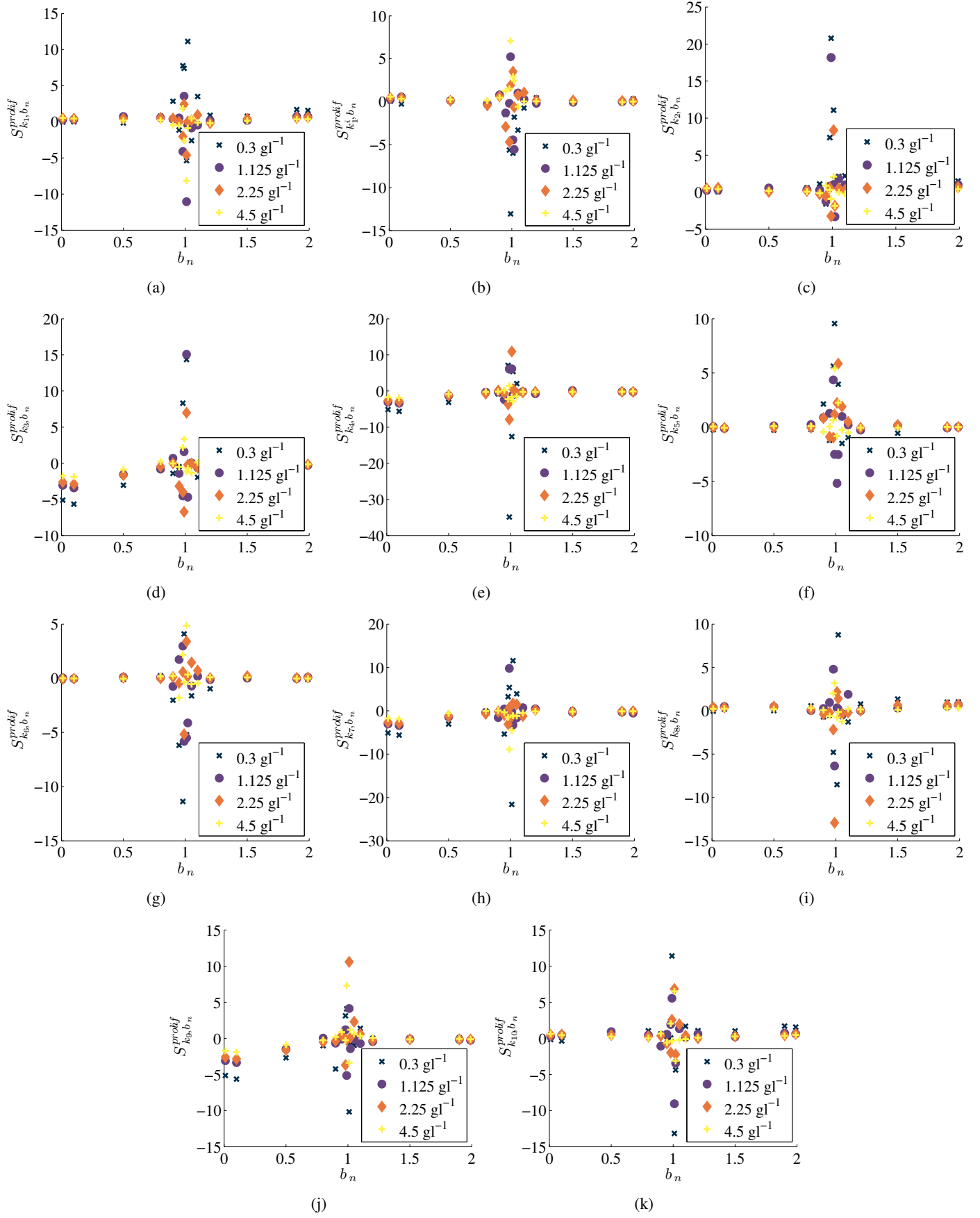Figure S4: S^{mig} for all parameters in parameter group 1.

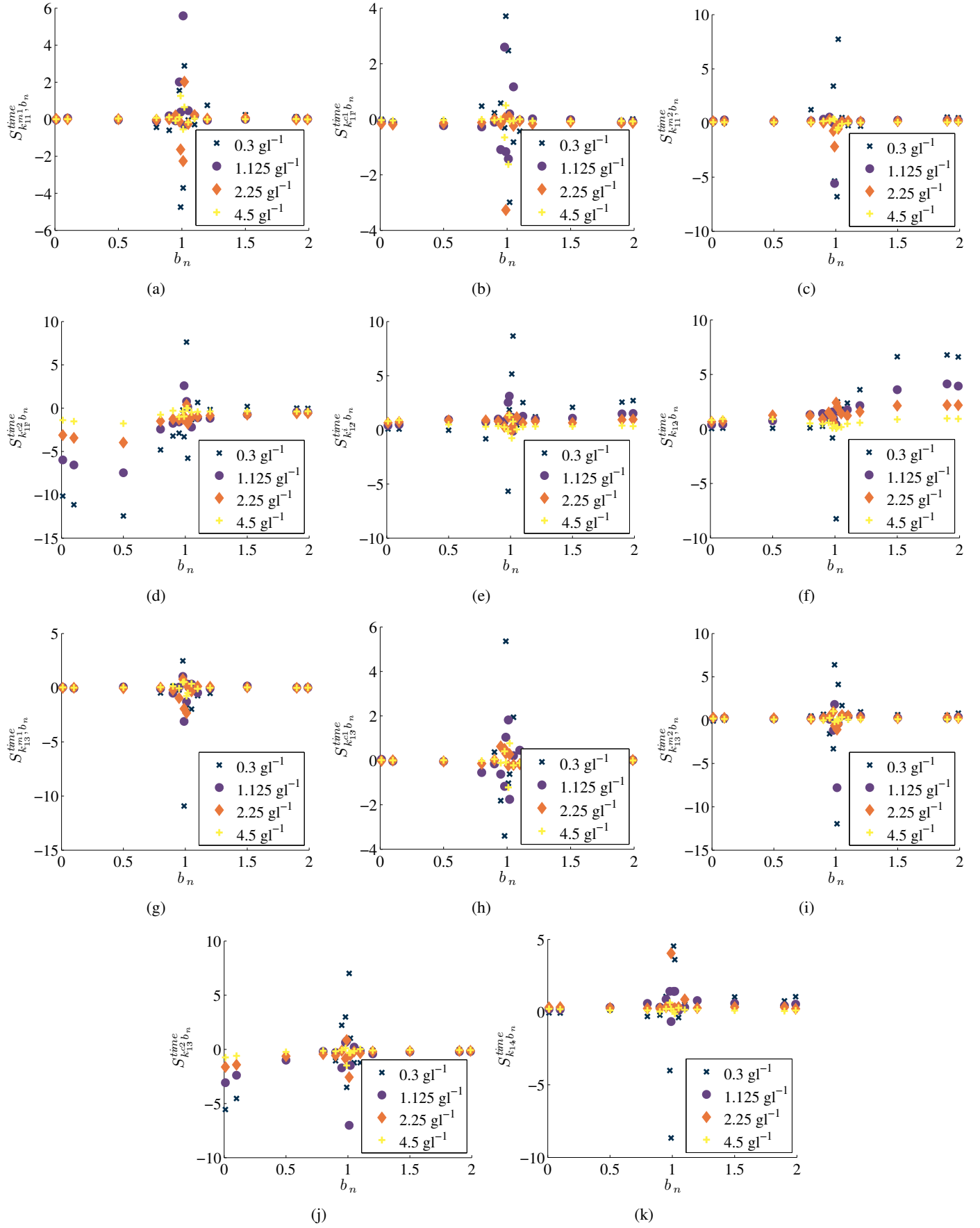Figure S5: S^{prolif} for all parameters in parameter group 1.

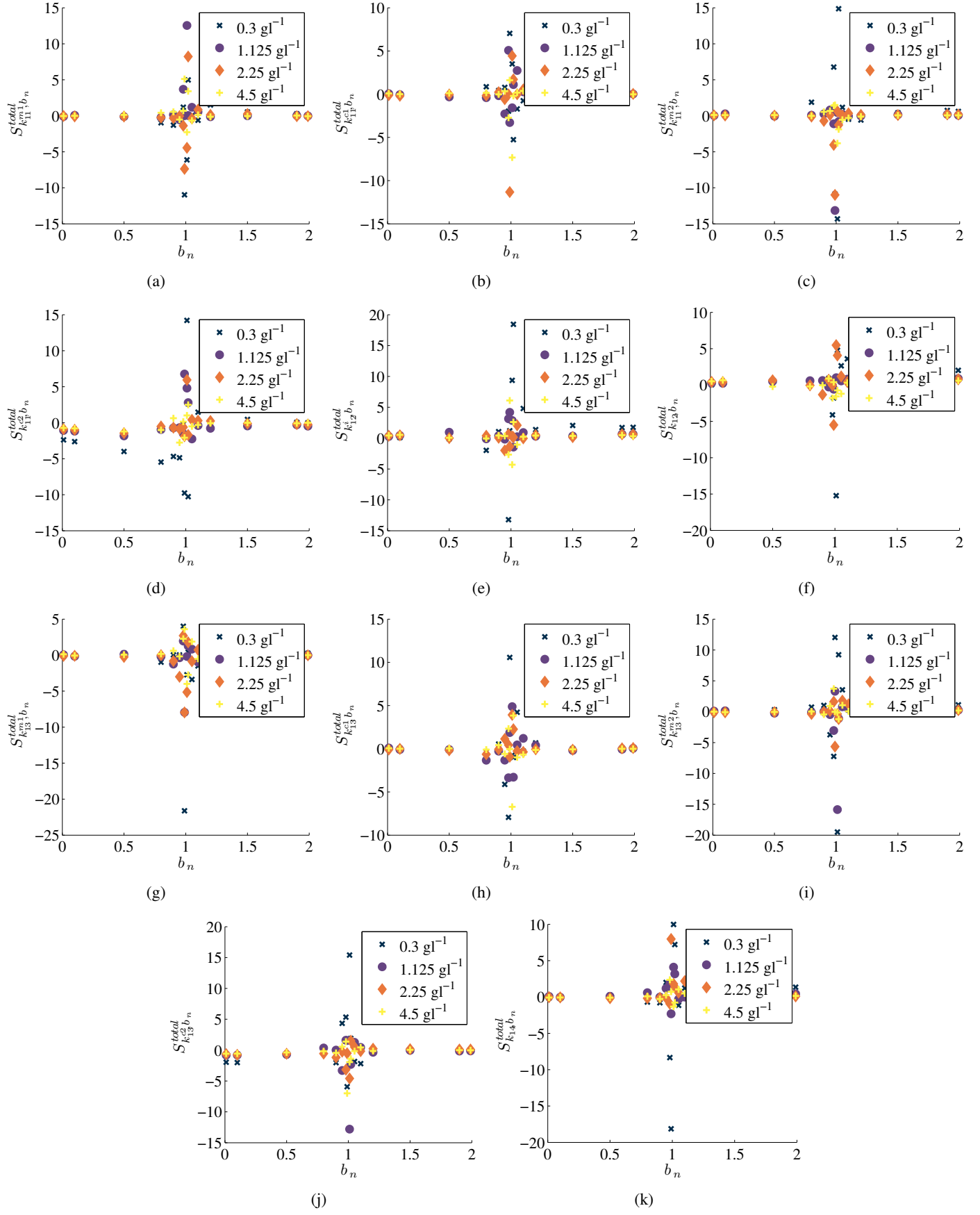Figure S6: S^{time} for all parameters in parameter group 2.

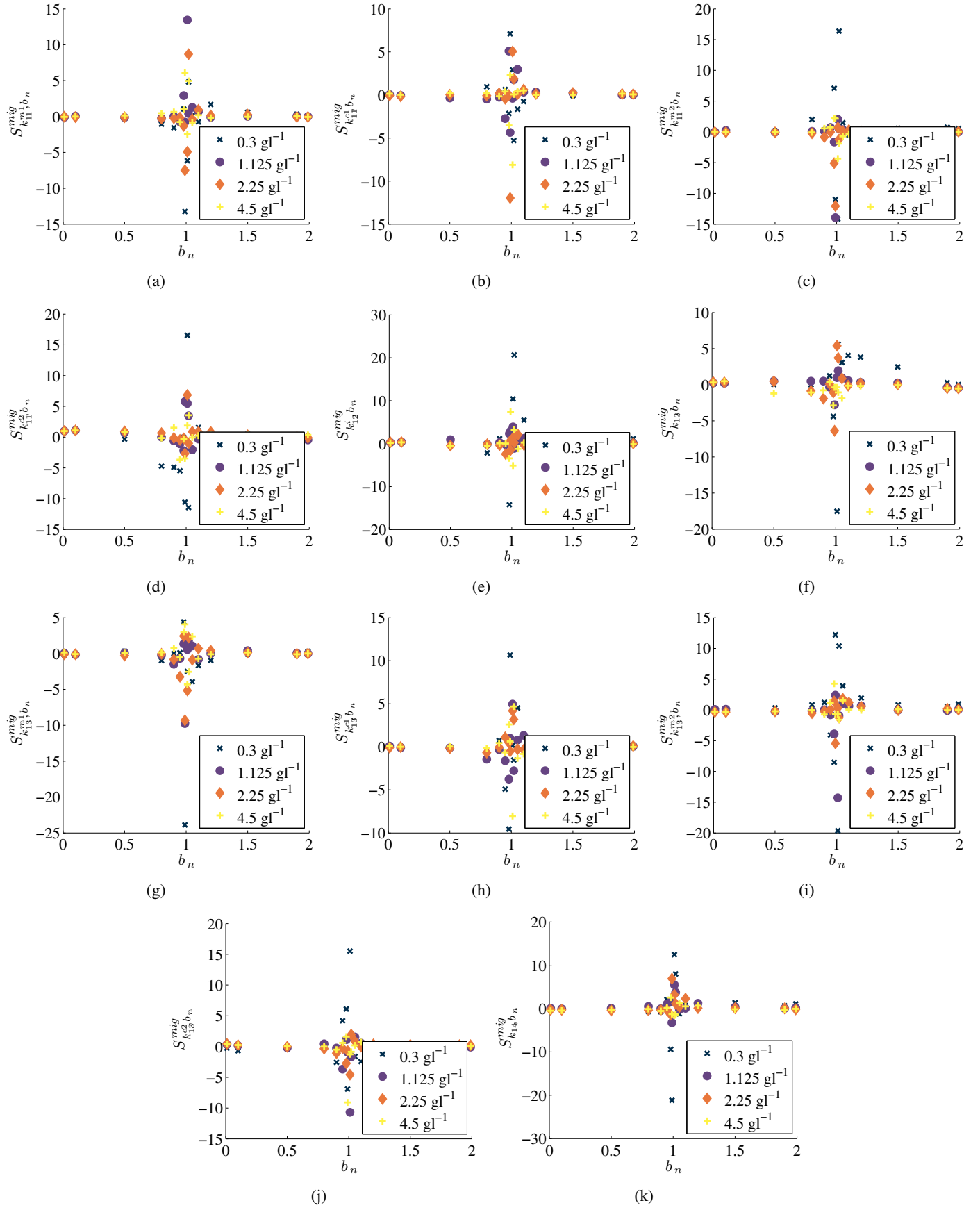Figure S7: S^{total} for all parameters in parameter group 2.

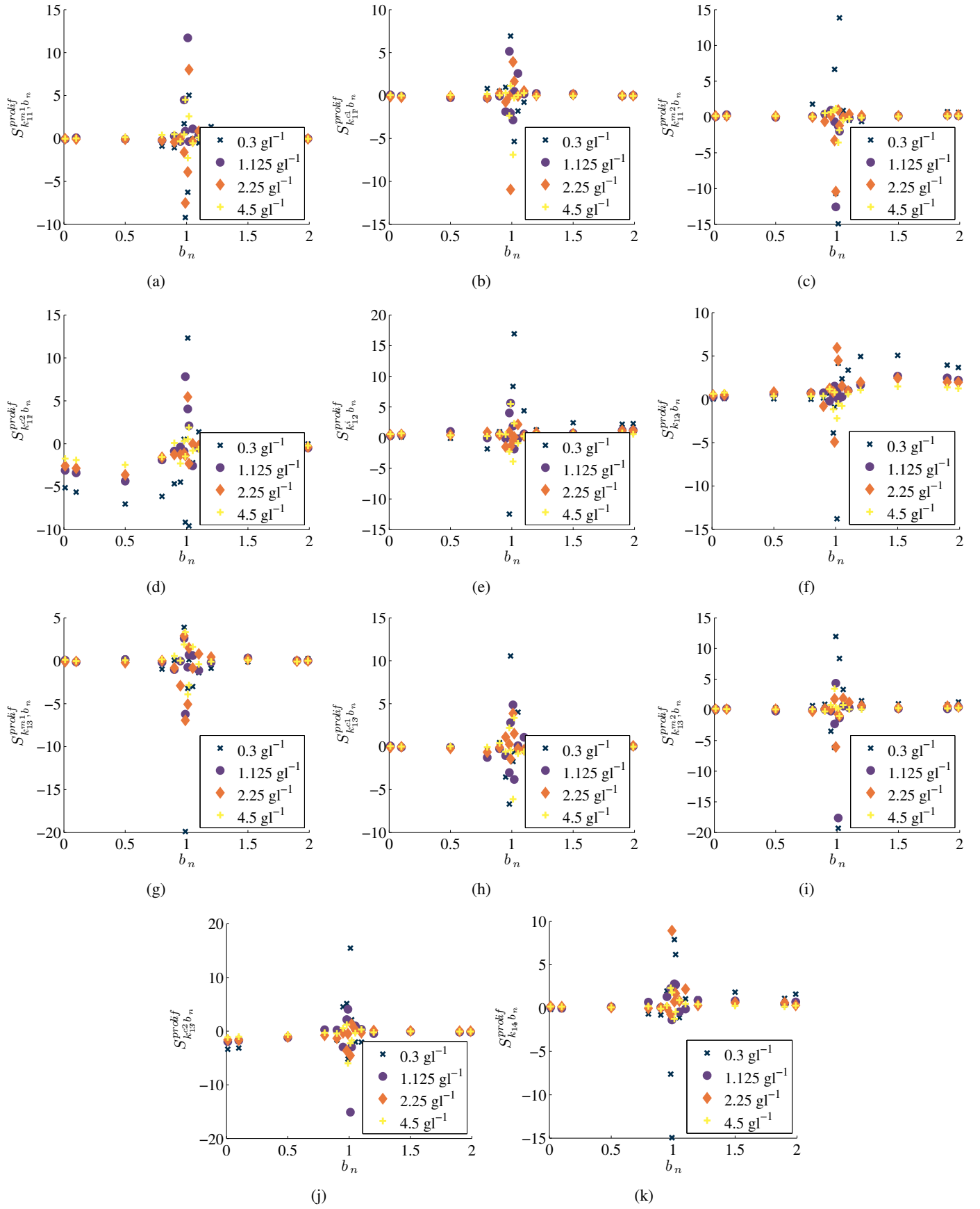Figure S8: S^{mig} for all parameters in parameter group 2.

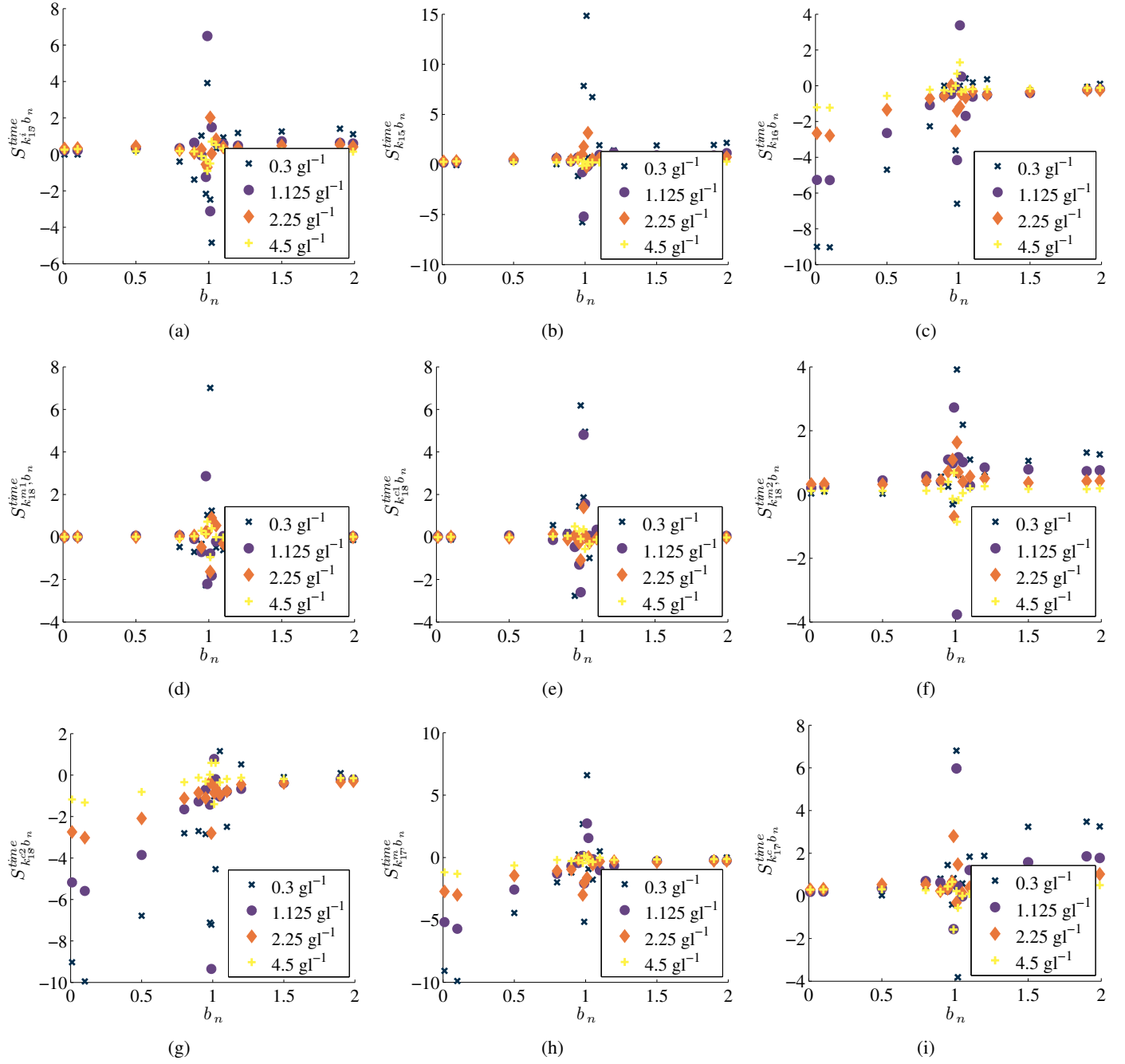Figure S9: S^{prolif} for all parameters in parameter group 2.

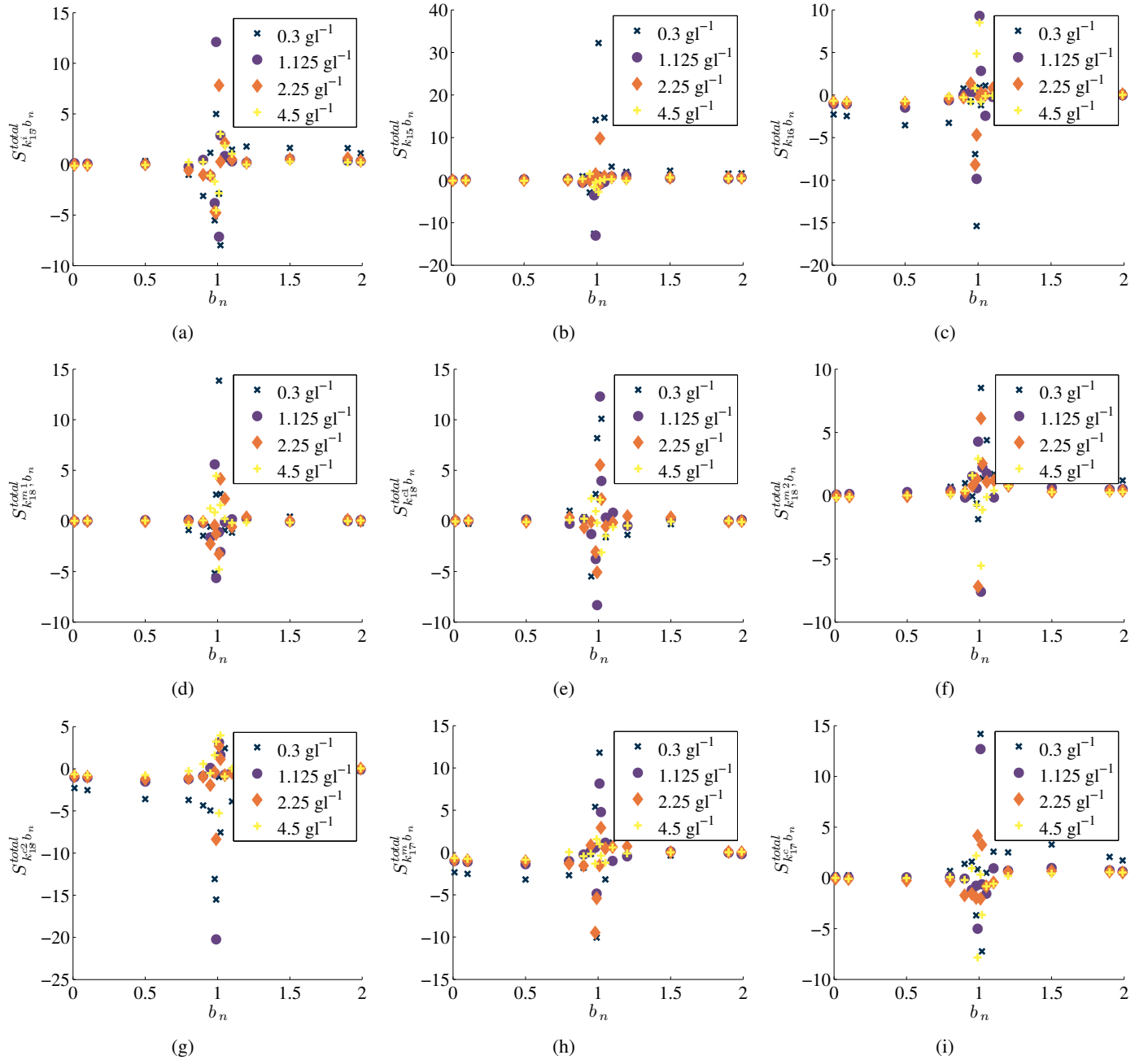Figure S10: S^{time} for all parameters in parameter group 3.

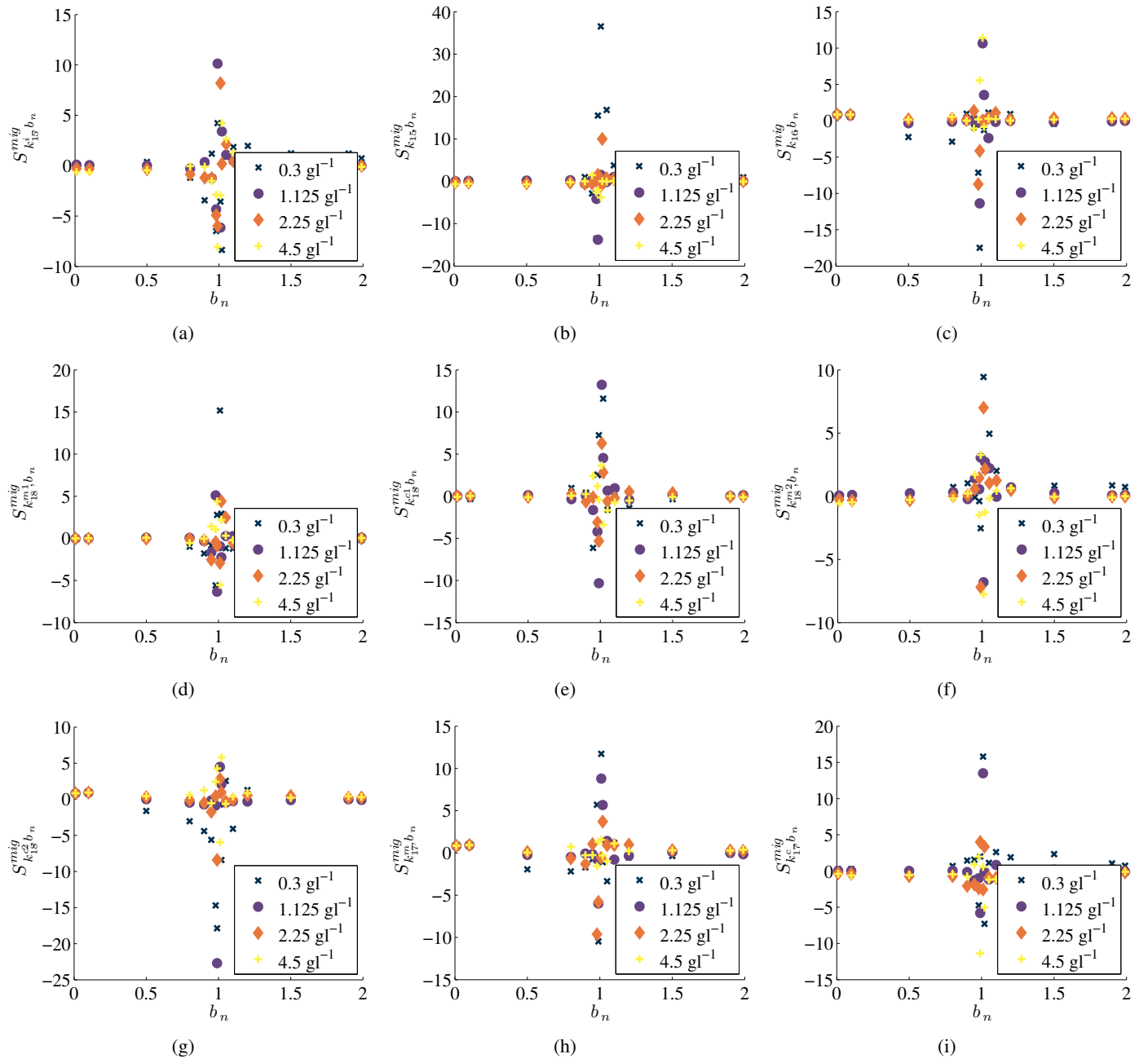Figure S11: S^{total} for all parameters in parameter group 3.

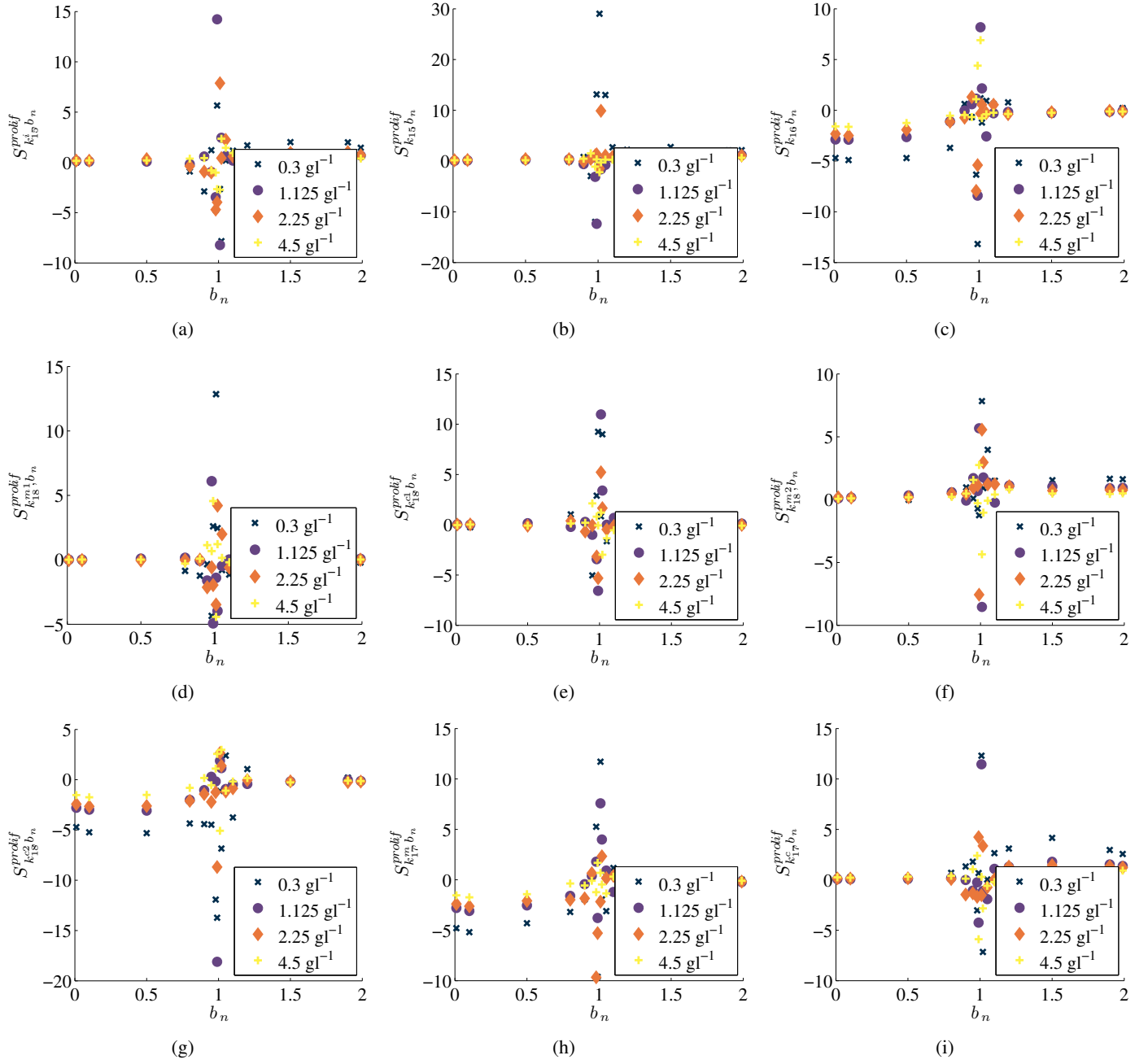Figure S12: S^{mig} for all parameters in parameter group 3.

Figure S13: S^{prolif} for all parameters in parameter group 3.