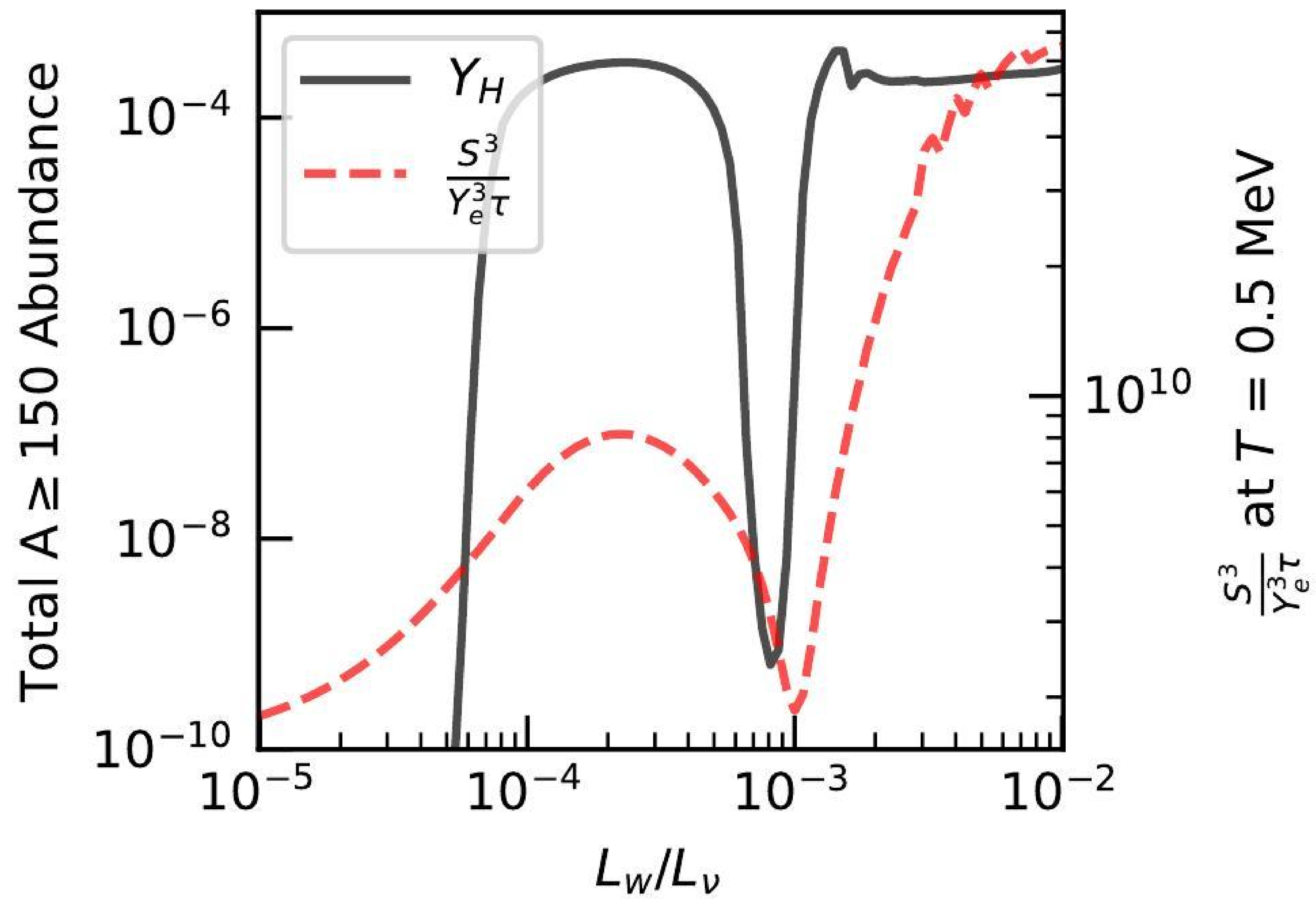

Figure 8. Comparison of the total, summed final abundances of all nuclides with mass $A \geq 150$ (representative of the strength of any r-process taking place) with the quantity $s^3/Y_e^3\tau_d$ evaluated when seed formation begins. The relationship between $s^3/Y_e^3\tau_d$ and Y_H is necessarily approximate due to the presence of wave heating during seed formation. The relationship found in Hoffman et al. (1997) was derived under the assumption of constant entropy, which is not generally true in our models. Nevertheless, we still observe a strong correlation between the two quantities, which helps to provide a qualitative explanation for the variation in heavy element nucleosynthesis near $L_w/L_\nu = 10^{-3}$. These results are for the same parameters as those in figure 7, with a finer grid in L_w/L_ν.

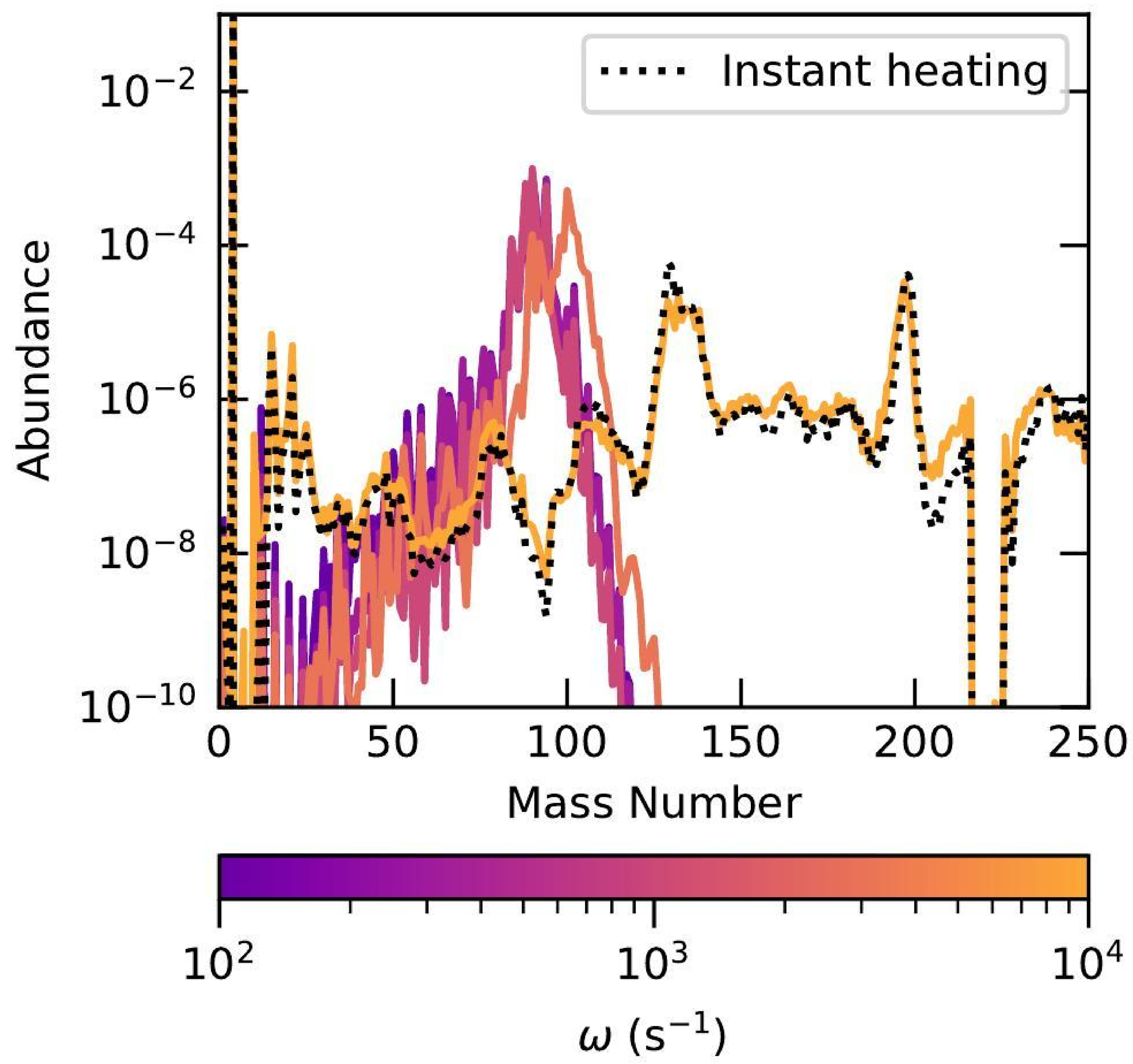

Figure 9. Final abundances for the NDW profiles shown in figure 5. For high frequencies, the shock heating begins early enough to drive a strong r-process even for a $1.5M_\odot$ neutron star. Instantaneous shock formation is illustrated by the black dashed line, showing the final abundances for a wind that immediately experiences shock heating from waves with $\omega = 2 \times 10^3$ rad s^{-1}.

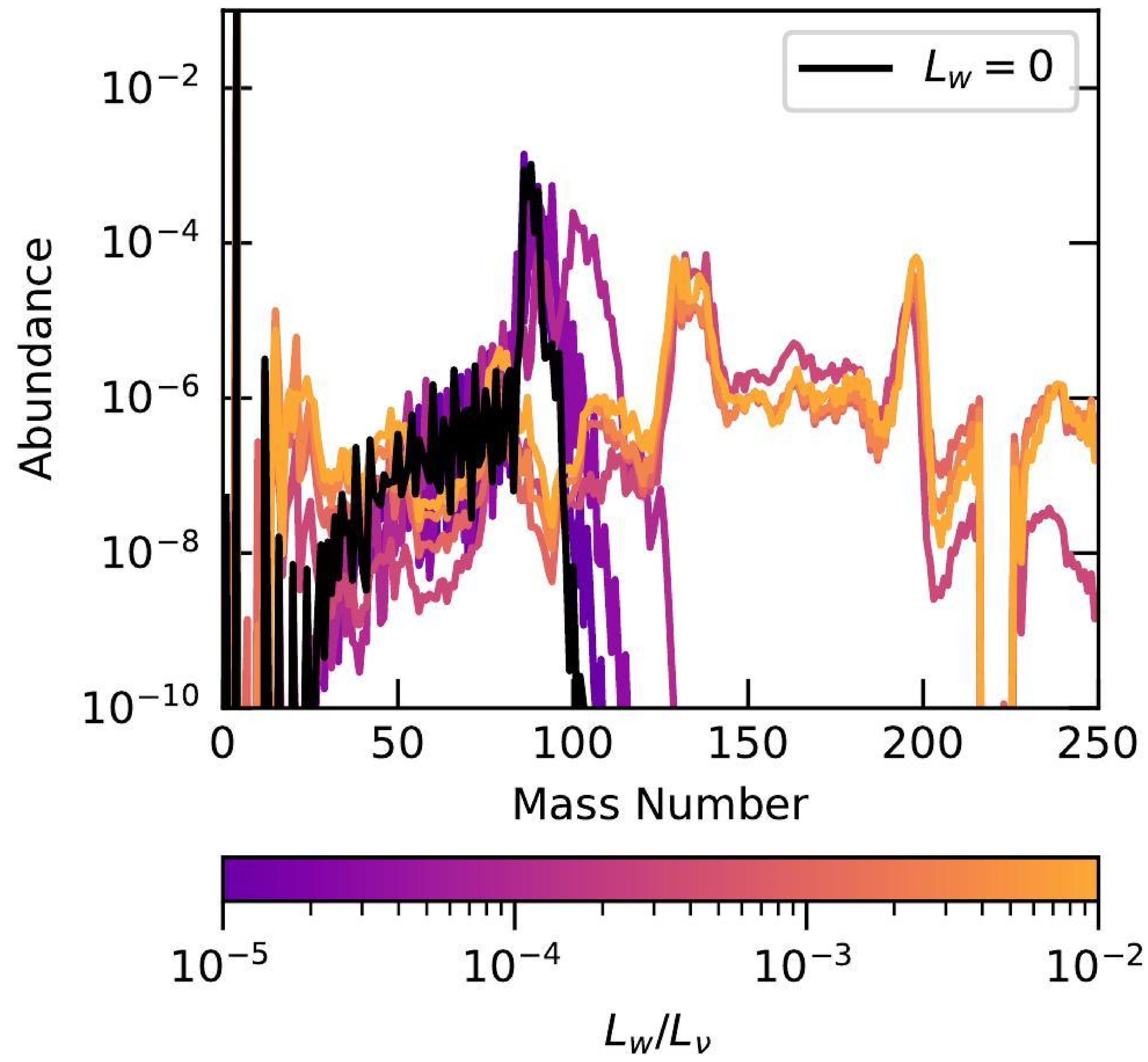

Figure 10. Final abundances using the same parameters as in figure 6, but assuming that shock heating begins instantaneously in the wind. We see that a strong r-process takes place even for moderate L_w.

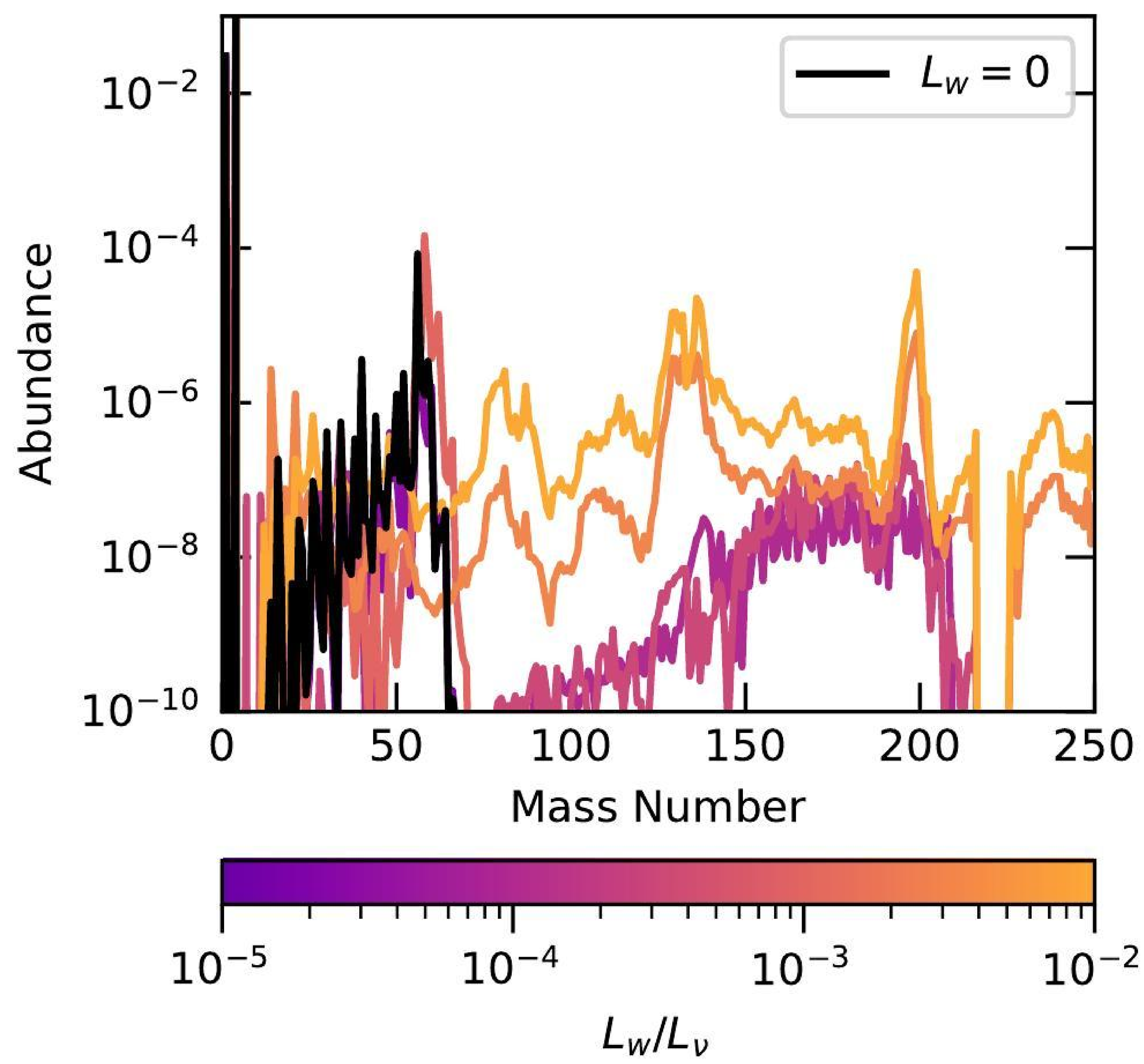

Figure 11. Final abundances using the same parameters as in figure 7, but with antineutrino energies tuned to $Y_{e,\mathrm{eq}} = 0.52$. We see r-processing regimes appear, despite a neutrino spectrum that would otherwise have precluded r-processing entirely.

final abundances for $M_{\rm NS} = 1.5\,M_\odot$, $L_\nu = 3 \times 10^{52}$ erg s^{-1}, and $L_w/L_\nu = 10^{-3}$. For $\omega < 10^4$ s^{-1}, the nucleosynthesis is similar to the models with $L_w/L_\nu \approx 10^{-3}$ that efficiently form seed nuclei, as discussed in the preceding paragraphs. Comparing to figure 5, shock heating begins only after the beginning of seed formation and therefore the resulting increase in entropy only has a limited impact on the nucleosynthesis. On the other hand, for the largest frequency consid-