# Review of: "Rhythmic Oscillations and Resonant Information Transfer in Biological Macromolecules"

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Potential competing interests: No potential competing interests to declare.

The frequency of rhythmic oscillations that the authors refer to seems to be the natural frequency of a physical body, which is a function of the mass and stiffness of the body. The authors give a different equation for calculating the frequencies as compared with that for calculating natural frequencies, but mass is still a factor in their equation. A simple fact refutes the authors hypothesis that such oscillations play a significant role in interactions between biomolecules via resonance. This fact is that recombinant proteins that biologists created do not lose their ability to interact with their partner proteins. In many cases, as long as the domain for the interactions is intact, the interactions will occur. This fact indicates that the masses of proteins, or the natural frequencies corresponding to these masses, are insignificant for the interactions. If the authors' hypothesis is correct, the recombinant proteins would have to attain frequencies harmonic to those of the corresponding unmodified proteins in order to retain their ability to interact with their partner proteins. Moreover, the authors' derivation of the equation for calculating the frequency is problematic because equating a certain mass from Einstein's equation to a single frequency of photons, as defined by $hv$, cannot be fathomed. According to the authors' equation, the larger the mass is, the higher the frequency is, which does not agree with observations that the larger the mass, the slower of the oscillation tends to be.