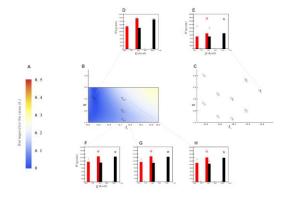
生物多层次整合计算:全原子模拟,分子网络,机体系统

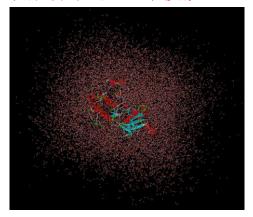


- 生物系 王冠宇课题组
- 国家自然科学面上项目: "基于非瘦素体重调节理论的肥胖症动力学模拟及实验研究"。
- ▶ 研究内容:

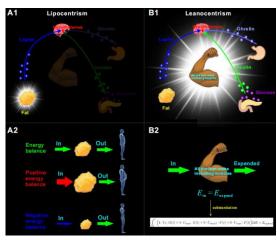
数据分析



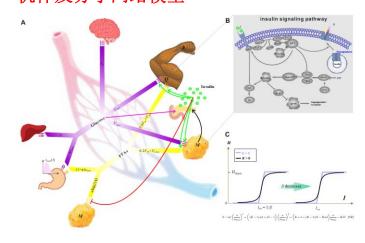
关键分子的全原子模拟



新学说的提出



机体及分子网络模型



大规模微分动力系统模型

 $U_{mvo,0} = u_{F0} \cdot N_{mvo}$

$$\begin{split} \frac{dm_i}{dt} &= \left(u_i \cdot G + u_{F0} \cdot F + u_i \cdot F\right) \cdot \Omega - \kappa \cdot m_i \cdot \phi\left(I\right) \\ \frac{dF}{dt} &= \kappa \cdot M \cdot \phi\left(I\right) / \Omega + (1 - \eta) \cdot s_{meal} - \left(V_{F0} + U_{adipo} + U_{myo}\right) \cdot F \\ \frac{dG}{dt} &= s_0 + \eta \cdot s_{meal} - \left(V_0 + U_{adipo} + U_{myo}\right) \cdot G \\ \frac{dI}{dt} &= \psi\left(M\right) \cdot [r + f\left(G\right)] - k \cdot I \\ u_{F0} &= V_{F0} / \left(N_{adipo} + N_{myo}\right) \\ u_{max} &= \left(V_{max} - V_0\right) / \left(N_{adipo} + N_{myo}\right) \end{split}$$