(a) **Monomer system WT Homozygous** Heterozygous **Mutant Homozygous** Molecular parameters Genotype - $\mathbf{a_i}$ = specific activity of species i $\mathbf{c_i} = \text{concentration at}$ $a_A = 1$ $a_A = 1$ $a_B = 1 - r$ $a_B = 1 - r$ equilibrium of **Protein** species i activity **r** = reduction in specific activity $\phi_{aa,m} =$ $c_i a_i$ $\phi_{ab,m} =$ $\phi_{\rm bb,m} =$ $c_i a_i$ $c_i a_i$ g = molecular dominance li∈{A,B} i∈{A} **1**i∈{B} coefficient φ = total activity Phenotype - $\omega_{\rm bb,m} = f(\varphi_{\rm bb,m}) = 1 - s_{\rm m}$ $\boldsymbol{\omega}_{\mathrm{aa,m}} = \boldsymbol{f}(\boldsymbol{\varphi}_{\mathrm{aa,m}}) = 1$ $\omega_{ab,m} = f(\varphi_{ab,m}) = 1 - h_m s_m$ (b) **Dimer system WT Homozygous** Heterozygous **Mutant Homozygous Phenotypic** parameters Genotype - ω = fitness **f** = fitness function \mathbf{s}_{m} = selection coefficient (monomers) **h**_m= phenotypic dominance Protein coefficient (monomers) activity $a_{AA} = 2$ $a_{BB} = 2(1-r)$ $a_{BB} = 2(1-r)$ $\mathbf{s_d}$ = selection coefficient $a_{AB} = 2(1-gr)$ (dimers) $\mathbf{h_d}$ = phenotypic dominance coefficient (dimers) $\varphi_{aa,d} =$ $\phi_{ab,d} =$ $\varphi_{\rm bb,d} =$ $c_i a_i$ $C_i a_i$ $c_i a_i$ **-**i∈{A,B,AA,<u>BB,AB}</u> **-**i∈{B,BB} **-**i∈{A,AA} Phenotype - $\boldsymbol{\omega}_{ab,d} = \boldsymbol{f}(\boldsymbol{\varphi}_{ab,d}) = 1 - h_d s_d$ $\boldsymbol{\omega}_{\mathrm{aa,d}} = \boldsymbol{f}(\boldsymbol{\varphi}_{\mathrm{aa,d}}) = 1$ $\omega_{\rm bb,d} = f(\varphi_{\rm bb,d}) = 1 - s_{\rm d}$