ROC Mixture Approach definition

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1 Posterior definition, without observed Φ values

$$\Pi(\Delta\eta_i, \Delta M_i, \phi_j, z, p|\vec{(}c)) \propto L(\vec{(}c)|\Delta\eta_i, \Delta M_i, \phi_j, z, p) \tag{1}$$

2 Posterior definition, with observed Φ values

$$\Pi(\Delta\eta_i, \Delta M_i, \phi_j, z, p|\vec{(}c), A_\phi, s_\epsilon) \propto L(\vec{(}c)|\Delta\eta_i, \Delta M_i, \phi_j, z, p, \vec{(}\Phi)) \tag{2}$$

2.1 Codon specific parameter ΔM and $\Delta\eta$

$$P(\Delta\eta_i, \Delta M_i|\vec{(}c), \vec{(}\phi), z) \tag{3}$$

2.2 Protein synthesis rate ϕ

$$P(\vec{(}\phi)|\vec{(}c), \Delta\eta_i, \Delta M_i, z) \times P(\vec{(}\phi|s_\phi) \tag{4}$$

2.3 Mixture assignment z

$$P(z|\vec{(}c), \Delta\eta_i, \Delta M_i, p) \tag{5}$$

2.4 Standard deviation of synthesis rate distribution s_ϕ

$$P(s_\phi|\phi, z) \tag{6}$$

2.5 Mixture probability p

$$P(p|z, \gamma) \tag{7}$$

2.6 Expected offset of observed synthesis rate A_ϕ

$$P(A_\phi|\vec{(}\Phi_k), \vec{(}\phi), s_\epsilon, z) \tag{8}$$

2.7 Noise in observed protein synthesis rate values s_ϵ

$$P(s_\epsilon|\vec{(}\Phi_k), \vec{(}\phi), z) \tag{9}$$