$$\frac{d\sigma 70}{dt} = M\sigma 70 \times K\sigma 70 + \sigma 70 \cdot lac \times Krl\sigma 70 + \sigma 70 \cdot ara \times Kra\sigma 70 + \sigma 70bind \times Kr\sigma 70bind - lac \times \sigma 70 \times K70MT7P - ara \times \sigma 70 \times K70MIgp2 - \sigma 70 \times K70MP1 - \sigma 70 \times Igp2 \times K1 - \sigma 70 \times \lambda\sigma 70$$

$$\frac{d\sigma 70bind}{dt} = \sigma 70 \times K70MP1 - \sigma 70bind \times Kr\sigma 70bind$$

$$\frac{d\sigma 70 \cdot lac}{dt} = \sigma 70 \times lac \times K70MT7P - \sigma 70 \cdot lac \times Krl\sigma 70$$

$$\frac{d\sigma 70 \cdot ara}{dt} = \sigma 70 \times ara \times K70MIgp2 - \sigma 70 \cdot ara \times Kra\sigma 70$$

$$\frac{d\sigma s}{dt} = M\sigma s \times K\sigma s + \sigma s \cdot lac \times Krl\sigma s + \sigma s \cdot ara \times Kra\sigma s + \sigma sbind \times Kr\sigma sbind + \sigma sbind2 \times Kr\sigma sbind2 - lac \times \sigma s * KsMT7P - ara \times \sigma s \times KsMIgp2 - \sigma s \times KsMP2 - \sigma s \times Igp5.7 \times K2 - \sigma s \times \lambda\sigma s - \sigma s \times KsMIgp5.7$$

$$\frac{dM\sigma s}{dt} = \sigma s \times KsM\sigma s + \sigma 70 \times K70M\sigma s - M\sigma s \times \lambda M\sigma s \ (stress)$$

$$\frac{d\sigma sbind}{dt} = \sigma s \times KsMP2 - \sigma sbind \times Kr\sigma sbind$$

$$\frac{d\sigma s \cdot lac}{dt} = \sigma s \times lac \times KsMT7P - \sigma s \cdot lac \times Krl\sigma s$$

$$\frac{d\sigma s \cdot ara}{dt} = \sigma s \times ara \times K70MIgp2 - \sigma s \cdot ara \times Kra\sigma s$$

$$\frac{dT7P}{dt} = MT7P \times KT7P + T7P \cdot lac \times KrlT7P - lac \times T7P \times KMGFP - T7P \times \lambda T7P$$

$$\frac{dMT7P}{dt} = \sigma 70 \times lac \times K70MT7P + \sigma s \times lac * KsMT7P - MT7P \times \lambda MT7P$$

$$\frac{dGFP}{dt} = MGFP \times KGFP - GFP \times \lambda GFP$$

$$\frac{dMGFP}{dt} = T7P \times lac \times KMGFP - MGFP \times \lambda MGFP$$

$$\frac{dIgp2}{dt} = MIgp2 \times KIgp2 - \sigma 70 \times Igp2 \times K1 - Igp2 \times \lambda Igp2$$

$$\frac{dMIgp2}{dt} = \sigma 70 \times ara \times K70MIgp2 + \sigma s \times ara \times KsMIgp2 - MIgp2 \times \lambda MIgp2$$

$$\frac{dP1}{dt} = MP1 \times KP1 - P1 \times \lambda P1$$

$$\frac{dMP1}{dt} = \sigma 70 \times K70MP1 - MP1 \times \lambda MP1$$

$$\frac{dP2}{dt} = MP2 \times KP2 - P2 \times \lambda P2$$

$$\frac{dMP2}{dt} = \sigma s \times KsMP2 - MP2 \times \lambda MP2$$

$$\frac{dIgp5.7}{dt} = MIgp5.7 \times KIgp5.7 - Igp5.7 \times \lambda Igp5.7$$

$$\frac{dMIgp5.7}{dt} = \sigma s \times ara \times KsMIgp5.7 + \sigma 70 \times ara \times K70MIgp5.7 - MIgp5.7 \times \lambda MIgp5.7$$