

muscle_O2_delivery_CellML1_0_model

1 “environment” component

This component has no equations.

2 “muscle_O2_delivery” component

This component has no equations.

3 “M_O2_blood_supply” component

OM1

$$O2ARTM = OVA * BFM$$

4 “M_venous_O2_content” component

OM2.to_OM4

$$OVS = \frac{(O2ARTM - RMO)}{HM * 5.25 * BFM}$$

OM5.and_OM5A

$$PVO = 57.14 * OVS * (EXC)^{EXCP2}$$

5 “metabolic_O2_consumption_by_M_tissue” component

OM17.and_OM18

$$P2O = \begin{cases} 38; & \text{if } PMO > 38, \\ PMO & \text{otherwise.} \end{cases}$$

OM19_to_OM23

$$MMO = AOM * OMM * EXC * \left(1 - \frac{((38.0001 - P2O))^3}{54872} \right)$$

6 “delivery_of_O2_to_M_tissues” component

OM6.and_OM8

$$RMO = (PVO - PMO) * PM5 * BFM$$

7 “volume_of_O2_in_M_tissue” component

OM9

$$DO2M = (RMO - MMO)$$

OM10

$$\frac{d(QOM1)}{d(time)} = DO2M$$

OM11

$$QOM = \begin{cases} 0.0001; & \text{if } QOM1 < 0.0001, \\ QOM1 & \text{otherwise.} \end{cases}$$

8 “pressure_of_O2_in_M_tissue_cells” component

OM12

$$PMO = PK2 * QOM$$

9 “parameter_values” component

This component has no equations.