**Supplemental Table 1. Detailed Settings of Virtual Mock Loop**

|  |  |
| --- | --- |
| **Rate and % systole** | 80 bpm, 45% |
| **Simulation run time** | 20 s |
| **Total blood volume** | 6.4 L |
| **Cardiac systolic compliance** |  |
|  | Left and right atria | 1 mL/mm Hg |
|  | Left and right ventricles | 9 mL/mm Hg |
| **Cardiac diastolic compliance** |  |
|  | Left and right atria | 1 mL/mm Hg  |
|  | Left and right ventricles | 10 mL/mm Hg  |
| **Valve orifice** |  |
|  | Mitral and tricuspid | 10,000 mL/(s∙mm Hg0.5) |
|  | Aortic and pulmonary | 350 mL/(s∙mm Hg0.5) |
| **Valve stenosis and regurgitation** | 0% |
| **Bronchial shunt resistance** | 1,000 mm Hg∙s/mL |
| **Systemic compliance** |  |
|  | Aorta | 0.08 mL/mm Hg |
|  | Arteries | 1.6 mL/mm Hg |
|  | Veins | 20.5 mL/mm Hg |
| **Pulmonary compliance** |  |
|  | Arterial sinus | 0.18 mL/mm Hg |
|  | Arteries | 3.8 mL/mm Hg |
|  | Veins | 20.5 mL/mm Hg |
| **Systemic resistance** |  |
|  | Aorta | 0.03 mm Hg∙s/mL |
|  | Arteries | 0.05 mm Hg∙s/mL |
|  | Arterioles | 0.1 mm Hg∙s/mL |
|  | Capillaries | 0.128 – 1.488 mm Hg∙s/mL (variable) |
|  | Veins | 0.12 mm Hg∙s/mL |
| **Pulmonary resistance** |  |
|  | Pulmonary trunk  | 0.004 mm Hg∙s/mL |
|  | Arteries | 0.002 mm Hg∙s/mL |
|  | Arterioles | 0.02 mm Hg∙s/mL |
|  | Capillaries | 0.020 – 0.511 mm Hg∙s/mL (variable) |
|  | Veins | 0.006 mm Hg∙s/mL |
| **Systemic inertance** |  |
|  | Aorta | 0.000005 mm Hg∙s2/mL |
|  | Arteries | 0.0017 mm Hg∙s2/mL |
|  | Veins | 0.001 mm Hg∙s2/mL |
| **Pulmonary inertance** |  |
|  | Arterial sinus | 0.00005 mm Hg∙s2/mL |
|  | Arteries | 0.0017 mm Hg∙s2/mL |
|   | Veins | 0.001 mm Hg∙s2/mL |

The parameters of heart and valves were set to be inactive. To set the desired systemic and pulmonary vascular resistances, only the values of the capillaries were changed, simulating the mock-loop valve settings. The bronchial shunt was shut off using a high resistance value (1,000), because the mock loop being simulated did not use a bronchial shunt.