# Supplementary material

## Pushability and trackability tests

**Supplementary Table 1** Measurement of pushability and force transmission ratio of the catheters.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group | Sample ID | Max. proximal force (N) | Max. distal force (N) | Proximal/distal ratio |
| DC | DC1 | 6.40 | 1.18 | 0.18 |
| DC2 | 7.10 | 1.33 | 0.19 |
| DC3 | 7.81 | 3.15 | 0.40 |
| DC4 | 10.03 | 3.48 | 0.35 |
| Min. | 6.40 | 1.18 | 0.18 |
| Max. | 10.03 | 3.48 | 0.40 |
| Mean | 7.83 | 2.28 | 0.28 |
| SD | 1.57 | 1.20 | 0.11 |
| GC | GC1 | 1.52 | 0.57 | 0.38 |
| GC2 | 5.46 | 2.22 | 0.41 |
| GC3 | 1.75 | 0.60 | 0.35 |
| GC4 | 5.61 | 3.76 | 0.67 |
| GC5 | 7.73 | 4.92 | 0.64 |
| GC6 | 2.88 | 1.50 | 0.52 |
| GC7 | 3.45 | 2.11 | 0.61 |
| Min. | 1.52 | 0.57 | 0.35 |
| Max. | 7.73 | 4.92 | 0.67 |
| Mean | 4.06 | 2.24 | 0.51 |
| SD | 2.29 | 1.61 | 0.13 |

DC: diagnostic catheter; GC: guide catheter; Max.: maximum; Min.: minimum; SD: standard deviation.

**Supplementary Table 2** Measurement of trackability and the force transmission parameters of the catheters.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group | Sample ID | Max. proximal force (N) | Distance at max. force (cm) | Mean proximal force (N) |
| DC | DC1 | 5.77 | 53.25 | 2.72 |
| DC2 | 3.73 | 53.36 | 2.00 |
| DC3 | 3.15 | 53.62 | 2.48 |
| DC4 | 3.74 | 53.01 | 2.61 |
| Min. | 3.15 | 53.01 | 2.00 |
| Max. | 5.77 | 53.62 | 2.72 |
| Mean | 4.10 | 53.31 | 2.45 |
| SD | 1.15 | 0.25 | 0.32 |
| GC | GC1 | 3.20 | 51.69 | 2.41 |
| GC2 | 2.80 | 53.28 | 2.11 |
| GC3 | 3.55 | 49.66 | 2.40 |
| GC4 | 148 | 49.84 | 1.23 |
| GC5 | 2.85 | 52.69 | 2.27 |
| GC6 | 2.59 | 49.67 | 2.20 |
| GC7 | 2.86 | 40.83 | 2.18 |
| Min. | 1.48 | 40.83 | 1.23 |
| Max. | 3.55 | 53.28 | 2.41 |
| Mean | 2.76 | 49.67 | 2.11 |
| SD | 0.65 | 4.17 | 0.41 |

DC: diagnostic catheter; GC: guide catheter; Max.: maximum; Min.: minimum; SD: standard deviation.

## Three-point bending tests

**Supplementary Table 3** List of catheters used for three-point bending tests

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | Type | I.D. (“) | Ref | Lot | PTM ID |
| Cordis guide catheter, VISTA BRITE TIP 6F, 100 cm | JL 3.5 | 0.07 | 670-002-00 | 17347512 | GC1 |
| Cordis guide catheter, VISTA BRITE TIP 5F, 100 cm | XB 3.0LBT | 0.056 | SM7328 | 17323131 | GC4 |
| Cordis guide catheter, VISTA BRITE TIP 6F, 100 cm | JR 3.5 | 0.07 | 670-080-00 | 17288033 | GC5 |
| Cordis diagnostic catheter, INFINITI Thrulumen 6F, 100 cm | JR 3.5 | 0.057 | 534-619T | 17196317 | AC1 |
| Cordis diagnostic catheter, INFINITI Thrulumen 6F, 100 cm | JL 3.5 | 0.057 | 534-618T | 17150489 | AC3 |

Test sequence: systems were tested in the following random order: GC4, GC5, AC1, GC1, AC3. I.D.: inner diameter.

## Distal tip softness assessment

**Supplementary Table 4** List of catheters used for distal tip softness assessment.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | Type | I.D. (") | Ref. | Lot | PTM ID |
| Cordis guide catheter, VISTA BRITE TIP 6F, 100 cm | JL 3.5 | 0.07 | 670-002-00 | 17347512 | GC1 |
| Cordis guide catheter, VISTA BRITE TIP 5F, 100 cm | XB 3.0 LBT | 0.056 | SM7328 | 17323131 | GC4 |
| Cordis guide catheter, VISTA BRITE TIP 6F, 100 cm | JR 3.5 | 0.07 | 670-080-00 | 17288033 | GC5 |
| Cordis diagnostic catheter, INFINITI Thrulumen 6F, 100 cm | JR 3.5 | 0.057 | 534-619T | 17196317 | AC1 |
| Cordis diagnostic catheter, INFINITI Thrulumen 6F, 100 cm | JL 3.5 | 0.057 | 534-618T | 17150489 | AC3 |

Test sequence: systems were tested in the following random order: AC3, GC1, AC1, GC5, GC4. I.D.: inner diameter.