

**Table S1** – Details on the origin and insertion of all extrinsic and intrinsic forearm and hand muscles of gibbons and macaques.

|  | <i>Rhesus macaques</i> *  |   |              | <i>Gibbons</i> +   |   |
|--|---|---|--------------|--|---|
|  | Origin  | Insertion   |              | Origin   | Insertion   |
| <b>Extrinsic muscles</b><br><i>Upper arm muscles</i> |   |   |              |  |   |
| <b>Bb</b>  | <i>damaged</i> <sup>7</sup>   | <i>damaged</i> <sup>7</sup>   | <b>Bb</b>    |  |   |
| long head  | supraglenoid tubercle of the scapula <sup>1-6</sup>   | radial tuberosity <sup>1-6</sup>  | long head    | supraglenoid tubercle of the scapula <sup>1-4,6,8</sup><br><i>damaged</i> <sup>5,7</sup>   | radial tuberosity <sup>1-8</sup>  |
| short head   | coracoid process of the scapula <sup>1-6</sup><br>+ fused with CB <sup>1-6</sup>                                    | distally onto muscle belly of long head (bicipital aponeurosis) <sup>1-6</sup>                        | short head   | crest of the lesser tubercle of the humerus <sup>1-4,6-8</sup><br>+ few muscle fibers shared with CB <sup>2</sup><br><i>damaged</i> <sup>5</sup> | bicipital aponeurosis into deep fascia (connection with FDS) on medial part of forearm <sup>1-8</sup>                 |
| <b>Tb</b>  | <i>damaged</i> <sup>7</sup>   | <i>damaged</i> <sup>7</sup>   | <b>Tb</b>    | all muscle bellies fused <sup>1-8</sup>  |   |
| long head  | infraglenoid tubercle of the scapula <sup>1-6</sup>   | oleocranon <sup>1-6</sup>   | long head    | infraglenoid tubercle of the scapula <sup>1-6,8</sup><br><i>damaged</i> <sup>7</sup>   | oleocranon <sup>1-8</sup>   |
| medial head  | humeral shaft <sup>1-6</sup>  | oleocranon <sup>1-6</sup>   | medial head  | humeral shaft <sup>1-8</sup>   | oleocranon <sup>1-8</sup>   |
| lateral head   | proximal humeral shaft <sup>1-6</sup>   | oleocranon <sup>1-6</sup>   | lateral head | proximal humeral shaft <sup>1-8</sup>  | oleocranon <sup>1-8</sup>   |
| <b>DET</b>   | muscle belly of latissimus dorsi <sup>1-6</sup><br><i>damaged</i> <sup>7</sup>                                      | oleocranon; fascia of Bb and Tb <sup>1-6</sup><br><i>damaged</i> <sup>7</sup>                         | <b>DET</b>   | muscle belly of latissimus dorsi <sup>2-8</sup><br><br><i>damaged</i> <sup>1</sup>   | oleocranon; fascia of Bb and Tb <sup>1-3</sup><br><br>tendon sheet to medial epicondyle of the humerus <sup>4-8</sup> |
| <b>B</b>   | distal half of the humerus <sup>1-2,4-6</sup><br>complete humeral shaft <sup>3</sup><br><i>damaged</i> <sup>7</sup> | tuberosity of the ulna <sup>1-6</sup><br>+ fused with SUP <sup>5</sup><br><i>damaged</i> <sup>7</sup> | <b>B</b>     | distal half of the humerus <sup>1-4,6-8</sup><br>+ fused with BR <sup>2</sup><br>distal 2/3 of the humerus <sup>5</sup>                          | tuberosity of the ulna <sup>1-8</sup><br>+ fused with PT <sup>4</sup>   |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

**Table S1** – Details on the origin and insertion of all extrinsic and intrinsic forearm and hand muscles of gibbons and macaques.

|                         | <i>Rhesus macaques</i> *  |  |            | <i>Gibbons</i> +  |  |
|-------------------------|---|--|------------|---|--|
|                         | Origin  | Insertion  |            | Origin  | Insertion  |
| <b>CB</b>               | <i>damaged</i> <sup>7</sup>   | <i>damaged</i> <sup>7</sup>  | <b>CB</b>  | <i>damaged</i> <sup>7</sup>   | <i>damaged</i> <sup>7</sup>  |
| superficial head        | coracoid process of scapula <sup>1-6</sup><br>+ fused with Bb long head <sup>1-6</sup>                                  | middle of humeral shaft <sup>1-6</sup>                                     |            | coracoid process of scapula <sup>1-6,8</sup>  | middle of humeral shaft <sup>1-4,6-8</sup><br>proximal 1/3 of humerus <sup>5</sup>   |
| deep head               | coracoid process of scapula<br>(and common coracoid tendon) <sup>1-6</sup>  | surgical neck of the humerus <sup>1-6</sup>                                |            |   |  |
| <b>ETA</b>              | medial epicondyle of the humerus <sup>1-7</sup>   | oleocranon <sup>1-7</sup>  |            | ABSENT  |  |
| <i>Forearm rotators</i> |   |  |            |   |  |
| <b>BR</b>               | supracondylar ridge of the humerus <sup>1-7</sup><br>+ fused with B <sup>1-2</sup>                                      | styloid process of the radius <sup>1-7</sup>                               | <b>BR</b>  | supracondylar ridge of the humerus <sup>1-8</sup><br>+ fused with B <sup>2,5</sup>                              | styloid process of the radius <sup>1,3-4</sup><br><br>middle of the radius <sup>2,5-8</sup><br>+ continues towards the styloid process <sup>7</sup> but does not reach it <sup>2,5,8</sup> |
| <b>SUP</b>              | lateral epicondyle of the humerus and proximal 1/3 of ulna <sup>1-7</sup>   | proximal half of the radius (anterior and posterior border) <sup>1-7</sup> | <b>SUP</b> | lateral epicondyle of the humerus <sup>1-8</sup><br>+ proximal 1/3 of ulna <sup>1-2,6-8</sup>                   | proximal half of the radius (anterior + posterior border) <sup>1-8</sup>   |
| <b>PT</b>               | medial epicondyle of the humerus <sup>1-7</sup><br>+ fused with FCR <sup>1,3-4</sup><br>+ fused with FDS <sup>5-7</sup> | halfway the radius <sup>1-7</sup>  | <b>PT</b>  | medial epicondyle of the humerus <sup>1-8</sup><br>+ fused with FCR <sup>2</sup><br>+ fused with B <sup>4</sup> | halfway the radius <sup>1-8</sup>  |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|                               | <i>Rhesus macaques</i> *   |   |  | <i>Gibbons</i> +   |  |
|-------------------------------|--|---|--|--|--|
|                               | Origin   | Insertion   |  | Origin   | Insertion  |
| <b>PQ</b>                     | distal 1/4 of the ulna <sup>1</sup><br>distal 1/5 of the ulna <sup>2-7</sup>   | distal interosseous membrane <sup>1-7</sup><br>+ distal 1/4 of the radius <sup>1</sup><br>+ distal 1/5 of the radius <sup>2-7</sup> | <b>PQ</b><br><br>for <sup>3,6</sup> :<br>appears as two muscle bellies fused together:<br><br>proximal belly<br><br>distal belly | distal 1/4 of the ulna <sup>1-2,4-5,7-8</sup><br><br><br>distal 1/4 of the ulna<br><br>distal interosseous membrane;<br>1/4 of the radius  | distal interosseous membrane <sup>1-2,4-5,7-8</sup><br><br>+ distal 1/4 of the radius <sup>1-2,4-5,7-8</sup><br><br>distal interosseous membrane;<br>1/4 of the radius<br><br>distal 1/4 of the ulna |
| <i>Extrinsic hand muscles</i> |  |   |  |  |  |
| <b>ECRL</b>                   | lateral supracondylar ridge of the humerus (proximal from BR) <sup>1-7</sup><br>+ fused with ECRB <sup>1,3-7</sup>                                     | dorsoradial base of MC2 <sup>1-7</sup>  | <b>ECRL</b>  | lateral supracondylar ridge of the humerus (proximal from BR) <sup>1-8</sup><br>+ fused with ECRB <sup>1,4,6</sup><br>+ lateral epicondyle of humerus <sup>5</sup>   | dorsoradial base of MC2 <sup>1-8</sup><br>+ base of MC1 <sup>4,6</sup>   |
| <b>ECRB</b>                   | lateral supracondylar ridge of the humerus (distal from ECRL) <sup>1-7</sup><br>+ fused with ECRL <sup>1,3-7</sup><br>+ fused with ED <sup>1,3-5</sup> | dorsal base of MC3 <sup>1-7</sup>   | <b>ECRB</b>  | lateral supracondylar ridge of the humerus (distal from ECRL) <sup>1-4,6-8</sup><br>+ fused with ECRL <sup>1,4,6</sup><br>+ fused with ED <sup>1</sup><br>+ lateral epicondyle of humerus <sup>2</sup><br><br>lateral epicondyle of humerus <sup>5</sup> | dorsoradial base of MC3 <sup>1-5,7-8</sup>   |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|                       | <i>Rhesus macaques</i> *  |  |   | <i>Gibbons</i> +  |   |
|-----------------------|---|--|---|---|---|
|                       | Origin  | Insertion  |   | Origin  | Insertion   |
| <b>APL</b>            | interosseous membrane;<br>middle of the ulna <sup>1-7</sup><br>+ fused with EDST <sup>7</sup> | tendon splits distally into two  | <b>APL</b>                                | interosseous membrane;<br>middle of the ulna <sup>1-8</sup>   | two separate tendons  |
| APL I                 |   | base of MC1 <sup>1-7</sup>   | APL I                                     |   | base of MC1 <sup>1-8</sup>  |
| APL II                |   | prepollex <sup>1-7</sup>   | APL II                                    |   | trapezium <sup>1-3,5-8</sup><br>+ prepollex <sup>6,8</sup><br>capitate <sup>4</sup>     |
| <b>ED II-III-IV-V</b> | lateral epicondyle of the humerus <sup>1-7</sup>  | distal phalanges of digits 2 to 5 (extensor mechanism) <sup>1-7</sup>                    | <b>ED II-III-IV-V</b>                     | lateral epicondyle of the humerus <sup>1-8</sup><br>+ interosseous membrane <sup>5,7</sup><br>+ fused with EDM <sup>3-6</sup> | distal phalanges of digits 2 to 5 (extensor mechanism) <sup>1-8</sup>                   |
| <b>EDST</b>           | proximal half of the ulna <sup>1-7</sup><br>+ fused with APL <sup>7</sup>                     | ulnar side of the distal phalanges of digits 2 and 3 (extensor mechanism) <sup>1-7</sup> | <b>EDST</b>                               | ABSENT  |   |
| <b>EDQQ</b>           | lateral epicondyle of the humerus <sup>1-7</sup>  | ulnar side of the distal phalanges of digits 4 and 5 (extensor mechanism) <sup>1-7</sup> | <b>EDQQ</b>                               | ABSENT  |   |
| <b>EDB</b>            | ABSENT  |  | <b>EDB</b>                                |   |   |
|                       |   |  | for <sup>1-3,5-8</sup> :<br>EDB II-III-IV | interosseous membrane <sup>1-3,5-8</sup><br>+ proximal ulna <sup>1-3</sup><br>+ distal half of ulna <sup>5-8</sup>            | proximal phalanx of digits 2 to 4 <sup>1-3,6-8</sup><br>base of MC2 to MC4 <sup>5</sup> |
|                       |   |  | for <sup>4</sup> :<br>EDB III-IV          | interosseous membrane<br>+ proximal ulna<br>+ fused with ED   | tendon to the proximal phalanx of digits 3 and 4  |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|            | <i>Rhesus macaques</i> *  |   |            | <i>Gibbons</i> +  |  |
|------------|---|---|------------|---|--|
|            | Origin  | Insertion   |            | Origin  | Insertion  |
| <b>EDM</b> | ABSENT  |   | <b>EDM</b> | lateral epicondyle of the humerus <sup>1-6,8</sup><br>+ fused with ED <sup>3-6</sup><br><br>distal ½ of ulna <sup>7</sup> | distal phalanx of digit 5 (together with ED V) <sup>1-8</sup>                              |
| <b>EI</b>  | ABSENT  |   | <b>EI</b>  | distal 1/3 of the ulna and interosseous membrane <sup>4</sup><br><br>for <sup>1-3,5-8</sup> : no separate EI (see EDB)    | proximal phalanx of digit 2 <sup>4</sup>   |
| <b>ECU</b> | lateral epicondyle of the humerus <sup>1-7</sup>                                    | ulnar base of MC5 <sup>1-7</sup>                            | <b>ECU</b> | lateral epicondyle of the humerus <sup>1-8</sup><br>+ proximal ulna <sup>7</sup><br>+ oleocranon <sup>6</sup>             | ulnar base of MC5 <sup>1-8</sup>   |
| <b>EPL</b> | proximal 1/3 of the ulna <sup>1-7</sup><br>+ interosseous membrane <sup>1-3,5</sup> | dorsal side of the distal phalanx of digit 1 <sup>1-7</sup> | <b>EPL</b> | proximal 1/3 ulna <sup>1-8</sup><br>+ interosseous membrane <sup>1,3-4</sup>  | dorsal side of the distal phalanx of digit 1 <sup>2-8</sup><br><i>damaged</i> <sup>1</sup> |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|            | <i>Rhesus macaques</i> *   |  |   | <i>Gibbons</i> +  |  |
|------------|--|--|---|---|--|
|            | Origin   | Insertion  |   | Origin  | Insertion  |
| <b>FDS</b> | <p>muscle bellies partially separable (fused on proximal side)<br/>+ connected with FDP at the level of digit 1-2-3 (extra muscle belly)</p> <p>medial epicondyle of the humerus<sup>1-7</sup></p> | <p>middle phalanx of digits 2 to 5<sup>1-6</sup><br/>+ connection between tendon IV and V<sup>2</sup></p> <p>proximal phalanx of digits 4 and 5<sup>7</sup><br/>+ vestigial tendon to digits 2 and 3 (insertion on fascia, at the level of the LUMB)<sup>7</sup></p> | <p><b>FDS</b></p> <p>for<sup>1-4,6</sup>:<br/>FDS II-III-IV-V</p> <p>for<sup>5</sup>:<br/>FDS II<br/>FDS III-IV<br/>FDS V</p> <p>for<sup>7</sup>:<br/>FDS II<br/>FDS III<br/>FDS IV<br/>FDS V</p> <p>for<sup>8</sup>:<br/>FDS II-II-IV<br/><br/>FDS V</p> | <p>medial epicondyle of the humerus<sup>1-4,6</sup><br/>+ fused to FDP<sup>3-4</sup><br/>+ proximal half of the ulna<sup>6</sup></p> <p>proximal 1/5 of the ulna<br/>medial epicondyle of the humerus<br/>proximal 2/5 of the ulna</p> <p>medial epicondyle of the humerus<br/>proximal half of the radius<br/>proximal ulna<br/>middle of the ulna</p> <p>proximal half of the ulna and medial epicondyle of the humerus<br/>halfway down the ulna</p> | <p>middle phalanx of digits 2 to 5<sup>1,4-8</sup></p> <p>middle phalanx of digit 2<sup>2</sup> (tendons to digit 3 to 5 damaged)</p> <p>proximal phalanx of digits 2 to 5<sup>3</sup></p> |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|   | <i>Rhesus macaques</i> *  |   |  | <i>Gibbons</i> + |           |
|---|---|---|--|------------------|-----------|
|   | Origin  | Insertion   |  | Origin           | Insertion |
| <p><b>FDP</b></p> <p>muscle bellies partially separable; tendons clustered together at wrist level; tendon 1 inserts on cluster (not just on tendon 2)</p> <p>medial epicondyle of the humerus; shaft of the radius (between SUP and PQ); interosseus membrane; shaft of the ulna (from oleocranon to PQ)</p> <p>for<sup>1,3-6</sup>:<br/> FDP I-II-III<br/> FDP IV<br/> FDP V</p> <p>small interconnection between tendon IV and V</p> <p>for<sup>2</sup>:<br/> FDP I-III-IV</p> <p>FDP II<br/> FDP V</p> <p>for<sup>7</sup>:<br/> FDP I-II-III<br/> tendons II and III show a tendon-lumbrical-tendon configuration</p> <p>FDP IV-V</p> | <p>distal phalanx of:</p> <p>digits 1 to 3<br/> digit 4<br/> digit 5</p> <p>digits 1 and 3<br/> proximal phalanx of digit 4<br/> digit 2<br/> digit 5</p> <p>digit 1<br/> proximal phalanx digit 2 (continues as a ligament)<br/> medial phalanx of digit 3 (continues to distal phalanx)</p> <p>digits 4 and 5</p> | <p><b>FDP</b></p> <p>for<sup>1-5</sup>:<br/> FDP I (cfr. FPL)<br/> FDP II-III-IV-V</p> <p>for<sup>6</sup>:<br/> FDP I-II<br/> FDP III-IV-V</p> <p>for<sup>7-8</sup>:<br/> FDP I-II-III-IV-V</p> | <p>medial epicondyle of the humerus; shaft of the radius (between SUP and PQ); interosseous membrane; shaft of the ulna (from oleocranon to PQ)</p> <p>digit 1<sup>2-5</sup><br/> digits 2 to 5<sup>3-5</sup><br/> digits 2 to 4<sup>2</sup> (tendon to digit 5 damaged)<br/> <i>all tendons damaged</i><sup>1</sup></p> <p>digit 1 and 2<br/> digits 3 to 5<br/> + connection between tendon II and III<sup>6</sup><br/> + connection between tendon III and IV<sup>6</sup></p> <p>digit 1 to 5</p> |                  |           |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|   | <i>Rhesus macaques</i> *   |   |                  | <i>Gibbons</i> †  |   |
|---|--|---|------------------|---|---|
|   | Origin   | Insertion   |                  | Origin  | Insertion   |
| <b>FCR</b>  | medial epicondyle of the humerus <sup>1-7</sup><br>+ fused with FDS <sup>3</sup><br>+ fused with PT <sup>1,3-4</sup> | palmar base of MC2 <sup>1-7</sup>   | <b>FCR</b>       | medial epicondyle of the humerus <sup>1-5,7-8</sup><br>+ proximal ulna <sup>8</sup><br>+ fused with FDS and PT <sup>6</sup> | palmar base of MC2 <sup>1-8</sup>   |
| <b>FCU</b>  | medial epicondyle of the humerus <sup>1-7</sup><br>+ oleocranon <sup>3,5-7</sup>                                     | pisiform bone <sup>1-7</sup>  | <b>FCU</b>       | medial epicondyle of the humerus <sup>1-8</sup><br>+ oleocranon <sup>6,8</sup>  | pisiform bone <sup>1-8</sup>  |
| <b>PL</b>   | medial epicondyle of the humerus <sup>1-7</sup>  | medial palmar aponeurosis <sup>1-7</sup>  | <b>PL</b>        | medial epicondyle of the humerus <sup>1-8</sup><br>+ fascia Bb <sup>4,6</sup>   | tendon of FCR <sup>2,4</sup><br>radial palmar aponeurosis <sup>3,5-8</sup><br><i>damaged</i> <sup>1</sup>                 |
| <b>Intrinsic muscles</b><br><i>Thenar muscles</i> |  |   |                  |   |   |
| <b>APB</b>  | flexor retinaculum <sup>1-7</sup><br>+ palmar aponeurosis <sup>1-3,5</sup><br>+ fused with FPB <sup>1,4-5</sup>      | radial sesamoid bone of MCP1 joint <sup>1-7</sup><br>+ radial side of the proximal phalanx <sup>4,6-7</sup>       | <b>APB</b>       | flexor retinaculum <sup>3,5-7</sup><br>+ prepollex <sup>6</sup><br><i>damaged</i> <sup>1-2,4,8</sup>                        | radial sesamoid bone of MCP1 joint <sup>3,5-7</sup><br>+ fused with OPP <sup>5</sup><br><i>damaged</i> <sup>1-2,4,8</sup> |
| <b>FPB</b>  | flexor retinaculum <sup>1-2,4-5,7</sup><br>+ fused with APB <sup>1,4-5</sup>   | radial sesamoid bone of MCP1 joint <sup>1-2,4-5,7</sup><br>+ fused distally with ADPo (ulnar side) <sup>5,7</sup> | <b>FPB</b>       | <i>damaged</i> <sup>1,4</sup>   | <i>damaged</i> <sup>1,4</sup>   |
| for <sup>3,6</sup> :<br>superficial head          | flexor retinaculum   | radial sesamoid bone of MCP1 joint  | superficial head | flexor retinaculum <sup>2-3,5-8</sup>   | radial sesamoid bone of MCP1 joint (ulnar side of APB insertion) <sup>2-3,5-8</sup><br>+ fused with OPP <sup>3</sup>      |
| deep head   | flexor retinaculum   | radial sesamoid bone of MCP1 joint  | deep head        | flexor retinaculum <sup>2-3,5-8</sup><br>+ fused with OPP <sup>7</sup>  | radial sesamoid bone of MCP1 joint <sup>2-3,5,7-8</sup><br>ulnar sesamoid bone of MCP1 joint <sup>6</sup>                 |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
† *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L



|                           | <i>Rhesus macaques</i> *  |   |  | <i>Gibbons</i> +  |   |
|---------------------------|---|---|--|---|---|
|                           | Origin  | Insertion   |  | Origin  | Insertion   |
| <b>ADP</b>                |   |   | <b>ADP</b>   |   |   |
| transverse head<br>ADPt   | palmar base and shaft of<br>MC3 <sup>1-7</sup>  | ulnar sesamoid bone of<br>MCP1 joint <sup>1-7</sup><br>+ MCP joint <sup>1,5,6</sup><br>+ proximal phalanx of<br>digit 1 <sup>1-3,6</sup><br>+ muscle tissue to radial<br>side MC2 <sup>4</sup>                  |  | <i>damaged</i> <sup>4,8</sup><br><br>palmar base and shaft of<br>MC3 <sup>1,3,5-6</sup>   | <i>damaged</i> <sup>4,8</sup><br><br>ulnar sesamoid bone of MCP1<br>joint <sup>1,3,5-6</sup><br>+ proximal phalanx of<br>digit 1 <sup>5</sup>               |
| oblique head<br>ADPo      | palmar base of MC1 <sup>1-7</sup><br>+ palmar base of MC2 <sup>5</sup><br>+ palmar base of MC3 <sup>3</sup> | ulnar sesamoid bone of<br>MCP1 joint <sup>1-7</sup><br>+ ulnar side of proximal<br>phalanx of digit 1 <sup>2</sup><br>+ radial side of proximal<br>phalanx of digit 1 <sup>3</sup><br>+ MCP1 joint <sup>5</sup> | for <sup>2,6</sup> :<br>no distinction<br>between transverse<br>and oblique head | palmar base of MC1 <sup>1,3</sup><br>palmar base of MC2 <sup>5-6</sup><br><br>palmar base of MC1 and<br>MC3   | ulnar sesamoid bone of MCP1<br>joint <sup>1,3,5-6</sup><br>+ proximal phalanx of<br>digit 1 <sup>4-5</sup><br><br>ulnar sesamoid bone of MCP1<br>joint      |
| <b>OPP</b>                | flexor retinaculum <sup>1-7</sup><br>+ prepollex <sup>6-7</sup>   | radial side of MC1 shaft <sup>1-7</sup>   | <b>OPP</b>   | flexor retinaculum <sup>6-8</sup><br>+ palmar base of MC1 <sup>6</sup><br>+ fused with FPB <sup>7</sup><br><br><i>damaged</i> <sup>1-2,4</sup><br><i>fused with FPBs</i> <sup>3</sup><br><i>fused with APB</i> <sup>5</sup> | radial side of MC1 shaft <sup>6-8</sup><br><br><i>damaged</i> <sup>1-2,4</sup><br><i>fused with FPBs</i> <sup>3</sup><br><i>fused with APB</i> <sup>5</sup> |
| <i>Hypothenar muscles</i> |   |   |  |   |   |
| <b>PB</b>                 | flexor retinaculum <sup>1-7</sup>   | palmar aponeurosis <sup>1-7</sup>   |  | flexor retinaculum <sup>3</sup><br>pisiform bone <sup>5</sup><br>mostly fat <sup>6-7</sup><br><br><i>damaged</i> <sup>1-2,4,8</sup>   | palmar aponeurosis <sup>3,5</sup><br><br><i>damaged</i> <sup>1-2,4,8</sup>  |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|            | <i>Rhesus macaques</i> *  |   |            | <i>Gibbons</i> +  |  |
|------------|---|---|------------|---|--|
|            | Origin  | Insertion   |            | Origin  | Insertion  |
| <b>ADM</b> | pisiform bone <sup>1-7</sup><br>+ flexor retinaculum and<br>pisohamate ligament <sup>1-2,6-7</sup><br>+ fused with FDM <sup>4-5</sup> | ulnar side of MCP5 joint <sup>1-7</sup><br>+ tendon joins FDM <sup>1-5</sup><br>+ proximal phalanx <sup>6-7</sup> | <b>ADM</b> | pisiform bone <sup>3,6</sup><br>base of MC5 <sup>5,7-8</sup><br><br><i>damaged</i> <sup>1-2,4</sup>   | ulnar side of MCP5 joint <sup>3,5-8</sup><br>+ fused with FDM <sup>7</sup>                           |
| <b>FDM</b> | flexor retinaculum <sup>1-7</sup><br>+ fused with ADM <sup>4-5</sup><br>+ pisiform bone <sup>6-7</sup>                                | MCP5 joint <sup>1-7</sup><br>+ ADM tendon <sup>1,3</sup><br>+ proximal phalanx <sup>2,5-7</sup>                   | <b>FDM</b> | flexor retinaculum <sup>3,7-8</sup><br>+ pisiform and base of<br>MC5 <sup>6</sup><br>+ fused with ODM <sup>6</sup><br><br>base of MC5 and fused with<br>ODM <sup>5</sup><br><br><i>damaged</i> <sup>1-2,4</sup> | ulnar base of the proximal<br>phalanx of digit 5 <sup>3,5-8</sup><br>+ fused with ADM <sup>3,7</sup> |
| <b>ODM</b> | flexor retinaculum <sup>1-7</sup><br>+ base of MCS <sup>5-6</sup>   | ulnar side of MC5 shaft <sup>1-7</sup>  | <b>ODM</b> | flexor retinaculum <sup>3,6-8</sup><br><br><i>damaged</i> <sup>1-2,4</sup><br><i>fused with FDM</i> <sup>5-6</sup>  | ulnar side of MC5 shaft <sup>3,6-8</sup>   |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|             | <i>Rhesus macaques</i> *  |  |                                      | <i>Gibbons</i> +   |   |
|-------------|---|--|--------------------------------------|--|---|
|             | Origin  | Insertion  |                                      | Origin   | Insertion   |
| <b>LUMB</b> | tendons of FDP  | radial side of the extensor sheath at the proximal phalanx of: | <b>LUMB</b>                          | tendons of FDP   | radial side of the extensor sheath at the proximal phalanx of:      |
| LUMB II     | FDP II <sup>1-6</sup><br>7: tendon – lumbrical – tendon                               | digit 2 <sup>1-6</sup>   | LUMB II                              | FDP II <sup>1-5,7</sup><br>+ FDP III <sup>7</sup><br><i>absent</i> <sup>6</sup>  | <i>all tendons damaged</i> <sup>1</sup><br>digit 2 <sup>2-5,7</sup> |
| LUMB III    | FDP III <sup>1-6</sup><br>+ FDP II <sup>1,3-6</sup><br>7: tendon – lumbrical – tendon | digit 3 <sup>1-6</sup>   | LUMB III                             | FDP III <sup>1-7</sup><br>+ FDP II <sup>4-5,7</sup>  | digit 3 <sup>2-7</sup>  |
| LUMB IV     | FDP IV <sup>1-7</sup><br>+ FDP III <sup>1-7</sup>                                     | digit 4 <sup>1-7</sup>   | LUMB IV                              | FDP IV <sup>1-5,7</sup><br>+ FDP III <sup>4,7</sup><br><i>absent</i> <sup>6</sup>  | digit 4 <sup>2-5,7</sup>  |
| LUMB V      | FDP V <sup>1-7</sup><br>+ FDP IV <sup>1-2,4-7</sup>                                   | digit 5 <sup>1-7</sup>   | LUMB V                               | FDP V <sup>4-5,7</sup><br>+ FDP IV <sup>4-5</sup><br>+ few muscle fibers to LUMB IV <sup>7</sup><br>FDP IV <sup>1</sup><br><i>damaged</i> <sup>2</sup><br><i>absent</i> <sup>3,6</sup> | digit 5 <sup>4-5,7</sup>  |
|             |   |  | for <sup>8</sup> :<br>LUMB II-III-IV | tendon of FDP II-IV (all lumbricals fused)   | digits 2 to 4   |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|           | <i>Rhesus macaques</i> * |           |           | <i>Gibbons</i> +   |  |
|-----------|--------------------------|-----------|-----------|--|--|
|           | Origin                   | Insertion |           | Origin   | Insertion                                  |
| <b>IM</b> | ABSENT                   |           | <b>IM</b> |  |  |
|           |                          |           | IM I      | radial side of MC2 base <sup>2-3</sup>                   | radial side MCP2 joint <sup>2-3</sup>      |
|           |                          |           | IM II     | ulnar shaft of MC2; radial shaft of MC3 <sup>1-4,7</sup> | radial side of MCP3 joint <sup>1-4,7</sup> |
|           |                          |           | IM III    | ulnar shaft of MC3; radial shaft of MC4 <sup>1,4</sup>   | ulnar side of MCP3 joint <sup>1,4</sup>    |
|           |                          |           | IM IV     | ulnar shaft of MC4; radial shaft of MC5 <sup>4</sup>     | ulnar side of MCP4 joint <sup>4</sup>      |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|                    | <i>Rhesus macaques</i> *   |  |                    | <i>Gibbons</i> +   |   |
|--------------------|--|--|--------------------|--|---|
|                    | Origin   | Insertion  |                    | Origin   | Insertion   |
| <b>FBP</b>         |  |  | <b>FBP</b>         |  |   |
| FBP III            | <i>FBP III is fused with IM Ia-b to form IOD I<sup>1-7</sup></i> |  | FBP III            | base of MC2 <sup>2-3</sup><br><i>FBP III is fused with IM Ia-b to form IOD I<sup>1,4-8</sup></i>             | radial side of proximal phalanx of digit 2 <sup>2-3</sup>   |
| FBP IV (= IOP I)   | shaft of MC2 <sup>1-7</sup>                                      | ulnar side of proximal phalanx digit 2 <sup>1-7</sup><br>+ MCP2 joint <sup>1-3</sup> | FBP IV (= IOP I)   | shaft of MC2 <sup>1-8</sup>  | ulnar side of proximal phalanx of digit 2 <sup>1-8</sup>    |
| FBP V              | <i>FBP V is fused with IM II to form IOD II<sup>1-7</sup></i>    |  | FBP V              | shaft of MC3 <sup>1-4,7</sup><br><i>FBP V is fused with IM II to form IOD II<sup>5-6,8</sup></i>             | radial side of proximal phalanx of digit 3 <sup>1-4,7</sup> |
| FBP VI             | <i>FBP VI is fused with IM III to form IOD III<sup>1-7</sup></i> |  | FBP VI             | shaft of MC3 <sup>1,4</sup><br><i>FBP VI is fused with IM III to form IOD III<sup>2-3,5-8</sup></i>          | ulnar side of proximal phalanx of digit 3 <sup>1,4</sup>    |
| FBP VII (= IOP II) | shaft of MC4 <sup>1-7</sup>                                      | radial side of proximal phalanx digit 4 <sup>1-7</sup><br>+ MCP4 joint <sup>3</sup>  | FBP VII (= IOP II) | shaft of MC4 <sup>1-8</sup>  | radial side of proximal phalanx of digit 4 <sup>1-8</sup>   |
| FBP VIII           | <i>FBP VIII is fused with IM IV to form IOD IV<sup>1-7</sup></i> |  | FBP VIII           | shaft of MC4 <sup>4</sup><br><i>FBP VIII is completely fused with IM IV to form IOD I<sup>V1-3,5-8</sup></i> | ulnar side of proximal phalanx of digit 4 <sup>4-6</sup>    |
| FBP IX (= IOP III) | shaft of MC5 <sup>1-7</sup>                                      | radial side of proximal phalanx digit 5 <sup>1-7</sup>                               | FBP IX (= IOP III) | shaft of MC5 <sup>1-8</sup>  | radial side of proximal phalanx of digit 5 <sup>1-8</sup>   |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|                      | <i>Rhesus macaques</i> *  |  |                      | <i>Gibbons</i> +  |  |
|----------------------|---|--|----------------------|---|--|
|                      | Origin  | Insertion  |                      | Origin  | Insertion  |
| <b>IOD</b>           |   | tendons join extensor mechanism of the corresponding digit   | <b>IOD</b>           |   | tendons join extensor mechanism of the corresponding digit   |
| IOD I (cf. IM I)     | ulnar side of MC1 base;<br>shaft of MC2 <sup>1-7</sup>  | radial side of MCP2 joint <sup>1-7</sup>   | IOD I (cf. IM I)     | ulnar side of MC1 and shaft of MC2 <sup>1,4-8</sup>   | muscle belly crosses radial side of MCP2 joint, tendon to proximal phalanx <sup>1,4-8</sup><br>+ extends to radial side of PIP2 joint <sup>7</sup> |
| IOD II (cf. IM II)   | shaft of MC2 + MC3 <sup>1-7</sup><br>+ entire fusion of FBP V and IM II <sup>1-7</sup>  | radial side of MCP3 joint <sup>1-7</sup>   | IOD II (cf. IM II)   | shaft of MC2 and MC3 <sup>5-6,8</sup><br>+ entire fusion of FBP V and IM II <sup>8</sup><br>+ partial fusion of FBP V and IM II <sup>5-6</sup>                | radial side of MCP3 joint <sup>8</sup><br>two distinct tendons; 1 inserting on MCP3 joint and 1 inserting on proximal phalanx <sup>5-6</sup>       |
| IOD III (cf. IM III) | shaft of MC3 + MC4 <sup>1-7</sup><br>+ fused to IOP II <sup>5</sup><br>+ entire fusion of FBP VI and IM III <sup>1-7</sup>                        | ulnar side of MCP3 joint <sup>1-7</sup>  | IOD III (cf. IM III) | shaft of MC3 and MC4 <sup>2-3,5-8</sup><br>+ entire fusion of FBP VI and IM III <sup>2</sup><br>+ partial fusion of FBP VI and IM III <sup>3,5-8</sup>        | ulnar side of MCP3 joint <sup>2</sup><br>two tendons; 1 inserting on MCP3 joint and 1 inserting on proximal phalanx <sup>3,5-8</sup>               |
| IOD IV (cf. IM IV)   | shaft of MC4 + MC5 <sup>1-7</sup><br>+ entire fusion of FBP VIII and IM IV <sup>1,3-7</sup><br>+ partial fusion of FBP III and IM IV <sup>2</sup> | ulnar side of MCP4 joint <sup>1,3-7</sup><br><br>two tendons; 1 inserting on MCP4 joint and 1 inserting on proximal phalanx <sup>2</sup> | IOD IV (cf. IM IV)   | shaft of MC4 and MC5 <sup>1-3,5-8</sup><br>+ entire fusion of FBP VIII and IM IV <sup>1-2,5,8</sup><br>+ partial fusion of FBP III and IM IV <sup>3,6-7</sup> | ulnar side of MCP4 joint <sup>1-2,5,8</sup><br>two tendons; 1 inserting on MCP4 joint and 1 inserting on proximal phalanx <sup>3,6-7</sup>         |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R  
+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L

|                    | <i>Rhesus macaques</i> *   |   |                                 | <i>Gibbons</i> +                      |  |
|--------------------|--|---|---------------------------------|---------------------------------------|--|
|                    | Origin   | Insertion   |                                 | Origin                                | Insertion  |
| <b>Contraahens</b> | <i>absent</i> <sup>5</sup>   | <i>absent</i> <sup>5</sup>  | <b>Contraahens</b>              |                                       |  |
| ~ C5               | palmar base MC3; partial fusion with IOD II + III <sup>1-4,6-7</sup> | radial side of MCP5 joint, joining extensor mechanism of digit 5 <sup>1-4,6-7</sup> | ~ C2                            | at the level of FBP VI <sup>1,4</sup> | ulnar side of MCP2 joint (together with IOP I) <sup>1,4</sup><br>+ tiny sliver to radial side of MCP3 joint <sup>1</sup> |
|                    |  |   | ~ C5                            | at the level of FBP IX <sup>4,7</sup> | ulnar side of MCP4 joint <sup>4,7</sup>  |
|                    |  |   | ~ C4                            | IOD III <sup>5</sup>                  | ulnar side of MCP3 joint <sup>5</sup>  |
|                    |  |   | ~ contraahens<br>Digitorum (CD) | distal IOD I <sup>6</sup>             | halfway the proximal phalanx (radial side) of digit 1 <sup>6</sup>   |
|                    |  |   | ~ C2                            | proximal IOP II <sup>6</sup>          | ulnar side of MCP2 joint <sup>6</sup>  |
|                    |  |   | ~ C2                            | at the level of FBP IV <sup>8</sup>   | ulnar side of MCP2 joint <sup>8</sup>  |

**Legend** \* *Rhesus macaques*: 1: Mm1 R / 2: Mm2 L / 3: Mm3 L / 4: Mm4 L / 5: Mm5 L / 6: Mm6 L / 7: Mm7 R

+ *Gibbons*: 1: H11 L / 2: H12 R / 3: H13 R / 4: Hp1 R / 5: Nc1 L / 6: N11 R / 7: Ss1 R / 8: Ss2 L