**Supplementary Material**

**Table 1:** List of the CRIB domain containing protein in model organism (*Dictyostellium discoideum*) and protozoan parasites (*Acanthamoeba castellani, Entamoeba histolytica, Giardia lambia, Trypanosoma cruzi,* and *Leishmania donavani*) with characterized and putative names with key references of structure and functional role of protein.

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| --- | --- | --- | --- | --- |
| SN | Protein family | Uniprot ID | Protein Characterization | Reference |
| *Dictyostelium discoideum* |
|  | PAK |
| 1 |  | Q55D99 | PAKa | 47 |
| 2 |  | Q869N2 | PAKb/MIHCK. Two isoforms (Q869N2.2- 413-440 aa missing) | 42, 45 |
| 3 |  | Q55GV3 | PAKc | 41 |
| 4 |  | Q55DD4 | PAKd | 40, 43 |
| 5 |  | Q869T7 | PAKf | Uncharacterized, This paper |
| 6 |  | Q54RV3 | PAKg | Uncharacterized, This paper |
|  | Ser/thr Kinase |
|  |  | Q54B33 | ser/thr protein kinase (PAKe) | Pseudo PAK like EhPAK1, Uncharacterized, This Paper |
|  |  | Q556S2 | ser/thr protein kinase (PAKh) | Pseudo PAK like EhPAK1, Uncharacterized, This paper |
|  | WASP |  |  |
| 1 |  | Q9GSG9 | WASPA (wasA gene) | 48 |
|  | WASP related |
| 1 |  | Q7KWP7 | WASP like protein B (wasB gene) | 46 |
| 2 |  | Q54QH4 | WASP like protein C (wasC gene) | Uncharacterized, This paper |
|  | Gelsolin Like Protein |
| 1 |  | Q551I6 | Gelsolin like protein/Non-specific ser/thr kinase | Uncharacterized, This paper |
|  | Coronin |  |  |
| 1 |  | P27133 | CoroninA (corA gene) | 6, 7, 44 |
| 2 |  | Q55E54 | CoroninB (corB gene) | 6, 38, 39 |
| 3 |  |  | Villidin | 8, 11 |

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| *Acanthamoeba castellani* |
|  | PAK |
| 1 |  | **Q93107** | MIHCK/PAK | 50, 51 |
|  | PAK related protein |
| 1 |  | L8GPX2 | PAK like protein 1 | MIHCK/Pak like, Uncharacterized, This paper |
| 2 |  | L8H707 | PAK like protein 2 | Putative PAK, Uncharacterized, This paper |
| 3 |  | L8GW48 | PAK like protein 3 | PAKa subfamily protein kinase, Uncharacterized, This paper |
|  | PAK like ser/thr kinase protein |
| 1 |  | L8HHB6 | Non-specific ser/thr protein kinase | Uncharacterized, This paper |
| 2 |  | L8GCL9 | Non-specific ser/thr protein kinase | Uncharacterized, This paper |
| 3 |  | L8GVV0 | Ser/threonine kinase | Uncharacterized, This paper |
| 4 |  | L8HET0 | Ser/threonine kinase | Uncharacterized, This paper |
|  | WASP related protein |
| 1 |  | L8H2P8 | WASP like protein 1 | WH1 domain containing protein, Uncharacterized, This paper |
| 2 |  | L8H6L6 | WASP like protein 2 | WH1 domain containing protein, Uncharacterized, This paper |
| 3 |  | L8H3X7 | WASP like protein 3 | WH1 domain containing protein, Uncharacterized, This paper |
| 4 |  | L8GYC7 | WASP like protein 4 | WH2 domain containing protein, Uncharacterized, This paper |
|  | Others |
| 1 |  | L8H695 | CRIB domain/leucine rich repeat containing protein | Uncharacterized, This paper |
| 2 |  | L8GKX1 | CRIB domain/tudor domain containing protein | Uncharacterized, This paper |
|  | Coronin |
| 1 |  | L8GFZ9 | Coronin | Uncharacterized, 12 |
| 2 |  |  |  |  |

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| --- |
| *Entamoeba histolytica* |
|  | PAK |
| 1 |  | Q24848 | Pseudo PAK/PAK1 | No CRIB, 32, 33 |
| 2 |  | C4LT57 | PAK2 | 31, 34 |
| 3 |  | Q5FZP2 | PAK3 | 34, 36 |
| 4 |  | C4LSU1 | PAK4 | 34, 35 |
| 5 |  | C4MBQ2 | PAK5 | 34, 35 |
| 6 |  | C4LVP2 | PAK6 | Uncharacterized, 34, This paper |
| 7 |  | C4M1H4 | PAK7 | Uncharacterized, 34, This paper |
|  | Others |
| 1 |  | C4M2L6 | C-ter WASP like CRIB domain containing protein | Uncharacterized, This paper |
| 2 |  | C4LZJ6 | C-ter WASP like CRIB domain containing protein | Uncharacterized, This paper |
| 3 |  | C4M0R3 | C-ter WASP like CRIB domain containing protein | Uncharacterized, This paper |
|  | Coronin |
| 1 |  | C4M137 | Coronin (CRN12b) | Uncharacterized, 6, 12, 13 This paper |
| 2 |  | C4M943 | Coronin (CRN12a) | Uncharacterized, 6, 12, 13 This paper |
| 3 |  | C4M5U0 | Coronin7 (Class 3) | Uncharacterized, 6, 12, 13, This paper |
| 4 |  | C4M5M6 | Coronin (Class 4) | Uncharacterized, 6, 12, This paper |

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| *Giardia lambia* |
| 1 |  | C6LUS0 | Non-specific serine/threonine protein kinase | Uncharacterized, This paper |
| *Trypanosoma cruzi* |
| 1 |  | Q4DHX7 | CRIB domain containing protein | Uncharacterized, This paper |
|  | Coronin |
| 1 |  | Q4DEX0 | Coronin  | Uncharacterized, 6, This paper |
| 2 |  | Q4D4X6 | Coronin | Uncharacterized, 6, 12, 18 This paper |
| *Leishmania donavani* |
| 1 |  | Q4QEZ0 | PAK like kinase domain containing protein | No CRIB, Uncharacterized, This paper |
|  | Coronin |
| 1 |  | Q3T1U8 | Coronin (CRN12, Class 3) | 13, 6, 12,18 |

**Table 2:** List of the CRIB domain containing protein in human host with characterized and putative names with key references of structure and functional role of protein.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SN |  | Uniprot ID | Protein Characterization | Key Reference |
| *Homo Sapiens* |
|  | PAK |
| 1 |  | B3KNX7Q13153 | PAK1 | 59, 65, 66 |
| 2 |  | Q13177 | PAK2 | 69, 59, 65 |
| 3 |  | O75914A0A087X294 | PAK3 | 64, 59, 65 |
| 4 |  | O96013 | PAK4 | 60, 59, 65 |
| 5 |  | Q9P286 | PAK5 | 61, 59, 62, 65 |
| 6 |  | Q9NQU5 | PAK6 | 59, 65 |
|  | MRCK |
| 1 |  | Q5VT25A0A0A0MRJ0A0A0A0MRJ1 | MRCKα | 22, 24, 27 |
| 2 |  | Q9Y5S2 | MRCKβ | 23, 24, 27 |
| 3 |  | Q6DT37 | MRCKγ | 21, 24 |
|  | MLK |
| 1 |  | P80192J3KPI6G3V347A0A087WW79G3V4P9 | MLK1/MAP3K9 | 54, 55 |
| 2 |  | Q02779 | MLK2/MAP3K10 | 52, 53, 54 |
| 3 |  | Q16584 | MLK3 | 28 |
| 4 |  | Q5TCX8 | MLK4 | 30 |
|  | ACK |
|  |  | Q07912 | ACK1 | 25, 26, 63 |
|  | WASP |
| 1 |  | P42768 | WASP | 56, 57, 58 |
| 2 |  | O00401 | N-WASP | 68 |
|  | Coronin |
| 1 |  | [P31146](https://www.uniprot.org/uniprot/P31146) | Coronin1A | 2, 1, 5, 6 |
| 2 |  | [Q9BR76](https://www.uniprot.org/uniprot/Q9BR76) | Coronin1B | 14, 3, 1, 5, 6 |
| 3 |  | [Q9ULV4](https://www.uniprot.org/uniprot/Q9ULV4) | Coronin1C | 4, 1, 5, 6,9 |
| 4 |  | Q6QEF8 | Coronin1D/Coronin6 | 5, 6 |
|  |  | Q92828 | Coronin2A | 15, 16,12 |
| 5 |  | [Q9UQ03](https://www.uniprot.org/uniprot/Q9UQ03) | Coronin2B | 16,1, 5, 6 |
| 6 |  | [P57737](https://www.uniprot.org/uniprot/P57737) | Coronin7 | 10, 1, 5, 6, 12 |
|  | CEP |
| 1 |  | Q00587 | CEP1/Borg5 | 19, 20 |
| 2 |  | O14613 | CEP2/Borg1 | 19, 20 |
| 3 |  | Q9UKI2C9JEZ4 | CEP3/Borg2 | 19, 20 |
| 4 |  | Q9H3Q1 | CEP4/Borg4 | 19, 20 |
| 5 |  | Q6NZY7 | CEP5/Borg3  | 19, 20 |
|  | SPEC |
| 1 |  | Q9NRR8 | SPEC1 | 29 |
| 2 |  | Q9NRR3D6REL0 | SPEC2 | 29 |
|  | Gene33 |
| 1 |  | Q9UJM3 I6S2Y9 B3KTV8 |  |  |
|  | PAR6 (pseudo-CRIB) |
| 1 |  | Q9NPB6 | PAR6α | 67, 70, 71 |
| 2 |  | Q9BYG5 | PAR6β | 73, 71, 74 |
| 3 |  | Q9BYG4 | PAR6γ | 72, 73, 71 |
|  | Others |
|  |  | IQGAPS |  | 75 |
|  |  | IRSp53 |  | 75 |

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