**SUPPLEMENTARY FILES**

**FILE 1**

**MASCOT SEARCH of ARIP-A peptides**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No** | **Accession** | **Coverage (%)** | **Peptides** | **Avg. Mass (kDa)** | **Description** |
| 1 | [tr|B9H8M2|B9H8M2\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3263) | 2 | 3 | 52.4 | Uncharacterized protein OS=*Populustrichocarpa* (GN=POPTR\_0005s24580g PE=4 SV=2) |
| 2 | [tr|I1IYY8|I1IYY8\_BRADI](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3278) | 1 | 2 | 109.6 | Uncharacterized protein OS=*Brachypodiumdistachyon* (GN=BRADI5G13680 PE=4 SV=1) |
| 3 | [tr|W9RJD9|W9RJD9\_9ROSA](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p1) | 2 | 1 | 90.1 | Uncharacterized protein OS=*Morusnotabilis* (GN=L484\_020068 PE=4 SV=1) |
| 4 | [tr|K4CSI3|K4CSI3\_SOLLC](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3264) | 4 | 2 | 48.4 | Uncharacterized protein OS=*Solanum lycopersicum*(GN=Solyc09g025220.1 PE=4 SV=1) |
| 5 | [tr|Q9C5R3|Q9C5R3\_ARATH](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3) | 2 | 1 | 37.4 | Putative uncharacterized protein At2g24150 OS=*Arabidopsis thaliana* (GN=At2g24150 PE=2 SV=1) |
| 6 | [tr|D7LGS2|D7LGS2\_ARALL](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3265) | 2 | 1 | 38.7 | Putative uncharacterized protein OS=*Arabidopsis lyrata subsp*. (GN=ARALYDRAFT\_481271 PE=4 SV=1) |
| 7 | [tr|Q9ZUH8|Q9ZUH8\_ARATH](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p4) | 2 | 1 | 38.8 | Expressed protein OS=*Arabidopsis thaliana* (GN=HHP3 PE=2 SV=2) |
| 8 | [tr|B9IGD7|B9IGD7\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3266) | 3 | 1 | 39.2 | Uncharacterized protein OS=*Populustrichocarpa*(GN=POPTR\_0016s12850g PE=3 SV=2) |
| 9 | [tr|U5FL99|U5FL99\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3267) | 3 | 1 | 39.6 | Uncharacterized protein OS=*Populustrichocarpa* (GN=POPTR\_0016s12850g PE=3 SV=1) |
| 10 | [tr|C0J3H9|C0J3H9\_CANEN](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p7) | 4 | 1 | 22.3 | Photosystem I assembly protein Ycf4 OS=*Canavalia ensiformis* (GN=ycf4 PE=3 SV=1) |
| 11 | [tr|W1NW94|W1NW94\_AMBTC](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p5) | 15 | 1 | 13.5 | Uncharacterized protein OS=*Amborellatrichopoda* (GN=AMTR\_s00089p00175440 PE=4 SV=1) |
| 12 | [tr|A0A022R2Z4|A0A022R2Z4\_MIMGU](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3272) | 2 | 1 | 54.5 | Uncharacterized protein OS=*Mimulus guttatus* (GN=MIMGU\_mgv1a005141mg PE=4 SV=1) |
| 13 | [tr|T1M344|T1M344\_TRIUA](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p11) | 5 | 1 | 17.6 | Ribosomal protein S7 OS=*Triticum urartu* (PE=3 SV=1) |
| 14 | [tr|K3ZPV6|K3ZPV6\_SETIT](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3276) | 1 | 1 | 432.3 | Uncharacterized protein OS=*Setariaitalica* (GN=Si028636m.g PE=4 SV=1) |
| 15 | [tr|W6JNA3|W6JNA3\_FAGES](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p7182) | 3 | 1 | 59.4 | 13S globulin OS=*Fagopyrum esculentum* (GN=Glb2A PE=4 SV=1) |
| 16 | [tr|U5GEU2|U5GEU2\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3273) | 5 | 1 | 37.2 | Uncharacterized protein (Fragment) OS=*Populustrichocarpa* (GN=POPTR\_0006s28910g PE=4 SV=1) |
| 17 | [tr|I3T340|I3T340\_LOTJA](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p26) | 5 | 1 | 22.9 | Uncharacterized protein OS=*Lotus japonicus* (PE=2 SV=1) |
| 18 | [tr|I3SDF8|I3SDF8\_LOTJA](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p27) | 5 | 1 | 22.9 | Uncharacterized protein OS=*Lotus japonicus* (PE=2 SV=1) |
| 19 | [tr|D8TZN2|D8TZN2\_VOLCA](RIP%20Paper/sobiya-IIT/My%20Documents/LCMS-ESIMS%20Germany/Sobiya2/protein.html#p3322) | 1 | 1 | 123.7 | Putative uncharacterized protein OS=*Volvox carteri* (GN=VOLCADRAFT\_121027 PE=4 SV=1) |

**FILE 2**

**MASCOT SEARCH of ARIP-B peptides**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.**  **No** | **Accession** | **Coverage (%)** | **Peptides** | **Avg. Mass (kDa)** | **Description** |
| 1 | [tr|B9H8M2|B9H8M2\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3263) | 3 | 4 | 52.4 | Uncharacterized protein OS=*Populustrichocarpa*GN=POPTR\_0005s24580g PE=4 SV=2 |
| 2 | [tr|H7BRP2|H7BRP2\_ASTME](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p9462) | 10 | 1 | 57.4 | Isoflavone-3'-hydroxylase OS=*Astragalus membranaceus*GN=I3'H PE=2 SV=1 |
| 3 | [tr|A1E4D1|A1E4D1\_9FABA](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p50) | 1 | 1 | 87.3 | Beta-amyrin synthase OS=*Polygala tenuifolia* PE=2 SV=1 |
| 4 | [tr|F6HUV7|F6HUV7\_VITVI](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p49) | 0 | 1 | 508 | Putative uncharacterized protein OS=*Vitis vinifera* GN=VIT\_14s0066g00610 PE=4 SV=1 |
| 5 | [tr|W5D5G6|W5D5G6\_WHEAT](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3274) | 2 | 1 | 31.7 | Uncharacterized protein (Fragment) OS=*Triticum aestivum* PE=4 SV=1 |
| 6 | [tr|K7M4T3|K7M4T3\_SOYBN](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3275) | 2 | 1 | 41.3 | Uncharacterized protein OS=*Glycine max* PE=4 SV=1 |
| 7 | [tr|U5GWU7|U5GWU7\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3279) | 1 | 1 | 88.8 | Uncharacterized protein (Fragment) OS=*Populustrichocarpa* GN=POPTR\_0001s42860g PE=4 SV=1 |
| 8 | [tr|U5GTY0|U5GTY0\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3280) | 1 | 1 | 94.9 | Uncharacterized protein (Fragment) OS=*Populustrichocarpa* GN=POPTR\_0001s428501g PE=4 SV=1 |
| 9 | [tr|I1IYY8|I1IYY8\_BRADI](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3278) | 1 | 1 | 109.6 | Uncharacterized protein OS=*Brachypodiumdistachyon* GN=BRADI5G13680 PE=4 SV=1 |
| 10 | [tr|F2E1S9|F2E1S9\_HORVD](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p9544) | 3 | 2 | 47.6 | Predicted protein OS=*Hordeum vulgare* var. distichum PE=2 SV=1 |
| 11 | [tr|B9T9T1|B9T9T1\_RICCO](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p9470) | 2 | 1 | 38.8 | Putative uncharacterized protein OS=*Ricinus communis* GN=RCOM\_1974000 PE=4 SV=1 |
| 12 | [tr|C1MX75|C1MX75\_MICPC](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3313) | 1 | 1 | 75.2 | Predicted protein OS=*Micromonaspusilla* (strain CCMP1545) GN=MICPUCDRAFT\_34570 PE=4 SV=1 |
| 13 | [tr|I1LUS2|I1LUS2\_SOYBN](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p9480) | 1 | 1 | 83.1 | Uncharacterized protein OS=*Glycine max* PE=4 SV=2 |
| 14 | [tr|U5FL99|U5FL99\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3267) | 3 | 1 | 39.7 | Uncharacterized protein OS=*Populustrichocarpa* GN=POPTR\_0016s12850g PE=3 SV=1 |
| 15 | [tr|B9IGD7|B9IGD7\_POPTR](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p3266) | 3 | 1 | 39.1 | Uncharacterized protein OS=*Populustrichocarpa* GN=POPTR\_0016s12850g PE=3 SV=2 |
| 16 | [tr|M0SNH6|M0SNH6\_MUSAM](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p9490) | 11 | 1 | 8.3 | Uncharacterized protein OS=*Musa acuminata* subsp. malaccensis PE=4 SV=1 |
| 17 | [tr|F6HKP2|F6HKP2\_VITVI](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p12) | 2 | 1 | 46.5 | Putative uncharacterized protein OS=*Vitis vinifera* GN=VIT\_08s0007g02740 PE=4 SV=1 |
| 18 | [tr|D7M2A1|D7M2A1\_ARALL](RIP%20Paper/sobiya-IIT/My%20Documents/desktop/LCMS-ESIMS%20Germany/Sobiya3/protein.html#p9610) | 3 | 1 | 69.3 | Putative uncharacterized protein OS=*Arabidopsis lyrata subsp*. lyrata GN=ARALYDRAFT\_351368 PE=4 SV=1 |

**FILE 3**

Sequence similarity between trypsin digested LC-MS/ESI-MS peptide sequences of ARIP-A with known RIPs in Magnoliophyta

| **Family** | **Plant** | **PDB ID** | **I/S** | **Peptides** | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** | **5,6,7** | **8, 9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17,18** | **19** |
| **Caryophyllaceae** | ***Dianthus caryophyllus (Clove pink)*** | **1RL0** | **I** | 50 | 67 | 60 | 42 | 75 | 37 | 25 | 40 | 33 | 50 | 30 | 100 | 75 | 30 | 100 |
| **S** | 67 | 100 | 80 | 67 | 75 | 75 | 75 | 70 | 83 | 100 | 90 | 100 | 100 | 70 | 100 |
| ***Lychnis chalcedonica (Scarlet lychnis)*** | **2G5X** | **I** | 80 | 67 | 37 | 75 | 50 | 33 | 50 | 33 | 50 | 33 | 71 | 43 | 80 | 80 | 17 |
| **S** | 80 | 100 | 87 | 75 | 100 | 67 | 75 | 75 | 100 | 100 | 71 | 57 | 100 | 80 | 100 |
| **Cucurbitaceae** | ***Trichosanthus kirilkii (Mongolian snake-gourd)*** | **1TCS** | **I** | 57 | 67 | 14 | 50 | 100 | 67 | 40 | 27 | 75 | 43 | 60 | 44 | 50 | 75 | 100 |
| **S** | 71 | 100 | 87 | 75 | 100 | 100 | 100 | 80 | 100 | 86 | 100 | 79 | 83 | 75 | 100 |
| ***Momordica balsamina (Balsam apple)*** | **3N31** | **I** | 100 | 60 | 60 | 42 | 57 | 43 | 100 | 43 | 75 | 67 | 57 | 78 | 50 | 100 | 67 |
| **S** | 100 | 80 | 80 | 67 | 71 | 86 | 100 | 86 | 100 | 100 | 86 | 89 | 83 | 100 | 100 |
| ***Momordica charantia (Balsam pear)*** | **1AHA** | **I** | 100 | 60 | 60 | 42 | 57 | 50 | 67 | 43 | 75 | 67 | 57 | 79 | 50 | 75 | 67 |
| **S** | 100 | 80 | 80 | 67 | 71 | 62 | 100 | 86 | 100 | 100 | 86 | 89 | 83 | 100 | 100 |
| **1MRG** | **I** | 100 | 60 | 23 | 40 | 57 | 50 | 67 | 43 | 75 | 67 | 57 | 79 | 50 | 75 | 67 |
| **S** | 100 | 80 | 85 | 67 | 71 | 62 | 100 | 86 | 100 | 100 | 86 | 89 | 83 | 100 | 100 |
| ***Momordica balsamina (Bitter gourd)*** | **3MRY** | **I** | 100 | 60 | 60 | 40 | 57 | 43 | 100 | 43 | 75 | 67 | 33 | 79 | 50 | 100 | 67 |
| **S** | 100 | 80 | 80 | 67 | 71 | 86 | 100 | 86 | 100 | 100 | 67 | 89 | 83 | 100 | 100 |
| ***Cucurbita moschata (Sarcocarp of pumpkin)*** | **3BWH** | **I** | 100 | 50 | 57 | 45 | 100 | 43 | 50 | 50 | 29 | 33 | 100 | 43 | 40 | 50 | 100 |
| **S** | 100 | 83 | 71 | 64 | 100 | 86 | 100 | 100 | 86 | 100 | 100 | 86 | 80 | 83 | 100 |
| **Euphorbiaceae** | ***Ricinus communis (Castor bean)*** | **1RTC** | **I** | 67 | 67 | 20 | 38 | 50 | 60 | 33 | 50 | 50 | 29 | 26 | 57 | 50 | 40 | 75 |
| **S** | 67 | 100 | 80 | 54 | 67 | 100 | 83 | 75 | 100 | 86 | 56 | 71 | 75 | 80 | 75 |
| **1IFS** | **I** | 67 | 67 | 20 | 33 | 50 | 60 | 33 | 50 | 50 | 29 | 26 | 57 | 50 | 40 | 75 |
| **S** | 67 | 100 | 80 | 58 | 67 | 100 | 83 | 75 | 100 | 86 | 56 | 71 | 75 | 80 | 75 |
| **2AAIa** | **I** | 67 | 67 | 20 | 60 | 50 | 60 | 33 | 50 | 50 | 29 | 26 | 57 | 50 | 40 | 75 |
| **S** | 67 | 100 | 80 | 100 | 67 | 100 | 83 | 75 | 100 | 86 | 56 | 71 | 75 | 80 | 75 |
| **2AAIb** | **I** | 43 | 50 | 50 | 37 | 100 | 100 | 50 | 37 | 75 | 25 | 54 | 33 | 57 | 67 | 33 |
| **S** | 86 | 67 | 87 | 43 | 100 | 100 | 100 | 75 | 100 | 100 | 64 | 67 | 71 | 100 | 100 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Plant** | **PDB ID** | **Peptides** | | | | | | | | | | | | | | | |
| **I/S** | **1** | **2** | **3** | **4** | **5,6,7** | **8, 9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17,18** | **19** |
| **Fabaceae** | ***Abrus precatorious (Indian licorice)*** | **1ABRa** | **I** | 100 | 50 | 100 | 50 | 67 | 67 | 50 | 80 | 33 | 33 | 57 | 45 | 50 | 37.5 | 40 |
| **S** | 100 | 83 | 100 | 100 | 100 | 100 | 100 | 100 | 78 | 100 | 57 | 54 | 83 | 75 | 100 |
| **1ABRb** | **I** | 29 | 33 | 75 | 83 | 50 | 100 | 100 | 40 | 75 | 100 | 43 | 40 | 50 | 50 | 100 |
| **S** | 71 | 67 | 100 | 83 | 100 | 100 | 100 | 70 | 75 | 100 | 71 | 67 | 87 | 100 | 100 |
| **2Q3Na** | **I** | 29 | 33 | 75 | 83 | 50 | 100 | 100 | 40 | 75 | 100 | 43 | 40 | 50 | 50 | 100 |
| **S** | 71 | 67 | 100 | 83 | 100 | 100 | 100 | 70 | 75 | 100 | 71 | 67 | 87 | 100 | 100 |
| **2Q3Nb** | **I** | 29 | 33 | 75 | 83 | 50 | 100 | 100 | 40 | 75 | 100 | 43 | 40 | 50 | 50 | 100 |
| **S** | 71 | 67 | 100 | 83 | 100 | 100 | 100 | 70 | 75 | 100 | 71 | 67 | 87 | 100 | 100 |
| **2ZRIa** | **I** | 29 | 50 | 14 | 80 | 75 | 50 | 100 | 80 | 43 | 33 | 43 | 60 | 33 | 67 | 50 |
| **S** | 71 | 100 | 79 | 80 | 100 | 75 | 100 | 100 | 71 | 100 | 86 | 80 | 78 | 100 | 100 |
| **2ZRIb** | **I** | 40 | 67 | 44 | 75 | 50 | 37 | 75 | 37 | 67 | 100 | 33 | 40 | 50 | 100 | 100 |
| **S** | 100 | 67 | 78 | 75 | 100 | 50 | 100 | 75 | 100 | 100 | 56 | 60 | 87 | 100 | 100 |
| **Hyacinthaceae** | ***Charybdis maritime (Sea squil)*** | **2B7U** | **I** | 57 | 75 | 20 | 62 | 60 | 44 | 100 | 30 | 25 | 67 | 67 | 100 | 33 | 29 | 67 |
| **S** | 57 | 100 | 80 | 75 | 100 | 89 | 100 | 65 | 87 | 100 | 100 | 100 | 75 | 86 | 100 |
| **Nyctaginaceae** | ***Bougainvillea spectabilis (Great Bougainvillea)*** | **3CTK** | **I** | 100 | 50 | 67 | 43 | 40 | 56 | 29 | 50 | 50 | 50 | 43 | 50 | 33 | 67 | 40 |
| **S** | 100 | 100 | 78 | 71 | 80 | 89 | 71 | 75 | 67 | 50 | 86 | 69 | 67 | 100 | 100 |
| **Phytolaccaceae** | ***Phytolacca americana (American pokeweed)*** | **1LLN** | **I** | 44 | 50 | 30 | 31 | 33 | 57 | 100 | 37 | 33 | 50 | 27 | 40 | 50 | 50 | 20 |
| **S** | 67 | 67 | 80 | 62 | 67 | 86 | 100 | 87 | 67 | 75 | 63 | 80 | 83 | 100 | 80 |
| **1GIK** | **I** | 100 | 50 | 50 | 20 | 67 | 43 | 33 | 40 | 37 | 33 | 75 | 28 | 100 | 60 | 33 |
| **S** | 100 | 100 | 50 | 20 | 83 | 71 | 83 | 80 | 87 | 100 | 75 | 78 | 100 | 100 | 100 |
| **1QCG** | **I** | 100 | 50 | 83 | 73 | 10 | 56 | 50 | 67 | 50 | 50 | 23 | 33 | 50 | 57.1 | 50 |
| **S** | 100 | 100 | 60 | 20 | 100 | 56 | 83 | 100 | 100 | 100 | 69 | 78 | 83 | 86 | 100 |
| ***Phytolacca dioica (Bella sombra tree)*** | **2QES** | **I** | 100 | 50 | 80 | 67 | 67 | 36 | 40 | 100 | 50 | 33 | 29 | 31 | 50 | 60 | 40 |
| **S** | 100 | 100 | 50 | 27 | 83 | 64 | 80 | 100 | 100 | 100 | 86 | 61 | 83 | 80 | 80 |
| **3H5Ka** | **I** | 100 | 50 | 83 | 73 | 67 | 33 | 40 | 100 | 50 | 33 | 20 | 43 | 100 | 67 | 20 |
| **S** | 100 | 100 | 50 | 20 | 83 | 83 | 80 | 100 | 100 | 100 | 70 | 86 | 100 | 100 | 100 |
| ***Phytolacca accinosa (Pokeweed seeds)*** | **2Q8W** | **I** | 100 | 50 | 83 | 73 | 66 | 42 | 33 | 40 | 50 | 33 | 20 | 28 | 100 | 25 | 50 |
| **S** | 100 | 100 | 83 | 73 | 83 | 71 | 83 | 80 | 100 | 100 | 70 | 78 | 100 | 100 | 100 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Plant** | **PDB ID** | **Peptides** | | | | | | | | | | | | | | | |
| **I/S** | **1** | **2** | **3** | **4** | **5,6,7** | **8, 9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17,18** | **19** |
| **Viscaceae** | ***Viscum album (European mistletoe)*** | **1CE7a** | **I** | 57 | 60 | 50 | 18 | 100 | 57 | 43 | 35 | 43 | 43 | 18 | 100 | 100 | 100 | 75 |
| **S** | 71 | 80 | 100 | 73 | 100 | 86 | 86 | 71 | 86 | 71 | 47 | 100 | 100 | 100 | 100 |
| **1CE7b** | **I** | 50 | 33 | 19 | 31 | 60 | 50 | 100 | 43 | 50 | 25 | 37 | 6 | 67 | 80 | 33 |
| **S** | 83 | 67 | 81 | 69 | 60 | 83 | 100 | 86 | 67 | 100 | 62 | 83 | 83 | 80 | 100 |
| **1M2Ta** | **I** | 60 | 60 | 33 | 100 | 100 | 57 | 43 | 50 | 75 | 43 | 18 | 100 | 100 | 75 | 50 |
| **S** | 100 | 80 | 78 | 100 | 100 | 86 | 86 | 75 | 100 | 71 | 47 | 100 | 100 | 100 | 75 |
| **1M2Tb** | **I** | 75 | 33 | 19 | 33 | 60 | 67 | 50 | 40 | 57 | 29 | 37 | 71 | 67 | 55 | 100 |
| **S** | 100 | 67 | 81 | 60 | 60 | 100 | 100 | 60 | 71 | 86 | 62 | 71 | 83 | 78 | 100 |
| **1OQLa** | I | 60 | 60 | 37 | 100 | 100 | 60 | 43 | 44 | 43 | 43 | 50 | 100 | 100 | 67 | 75 |
| S | 100 | 100 | 87 | 100 | 100 | 80 | 86 | 67 | 86 | 86 | 100 | 100 | 100 | 100 | 100 |
| **1OQLb** | I | 25 | 33 | 37 | 36 | 60 | 50 | 100 | 25 | 50 | 25 | 37 | 71 | 83 | 80 | 100 |
| S | 62 | 67 | 87 | 64 | 60 | 83 | 100 | 83 | 67 | 100 | 62 | 71 | 83 | 80 | 100 |
| **1PC8a** | I | 60 | 60 | 50 | 60 | 100 | 60 | 43 | 43 | 43 | 43 | 100 | 44 | 100 | 100 | 75 |
| S | 100 | 100 | 83 | 80 | 100 | 80 | 86 | 64 | 86 | 71 | 100 | 78 | 100 | 100 | 100 |
| **1PC8b** | I | 25 | 33 | 50 | 31 | 60 | 50 | 100 | 43 | 50 | 25 | 37 | 71 | 67 | 80 | 33 |
| S | 62 | 6 | 75 | 69 | 60 | 83 | 100 | 86 | 67 | 100 | 62 | 71 | 83 | 80 | 100 |
| **1PUMa** | I | 60 | 60 | 31 | 57 | 67 | 57 | 43 | 50 | 43 | 43 | 18 | 100 | 100 | 75 | 75 |
| S | 100 | 80 | 69 | 86 | 100 | 86 | 71 | 75 | 86 | 71 | 47 | 100 | 100 | 100 | 100 |
| **1PUMb** | I | 60 | 33 | 37 | 33 | 60 | 67 | 50 | 40 | 50 | 25 | 37 | 71 | 66 | 56 | 100 |
| S | 80 | 67 | 87 | 67 | 60 | 100 | 100 | 60 | 67 | 100 | 62 | 71 | 83 | 78 | 100 |
| **1PUUa** | I | 60 | 60 | 31 | 57 | 67 | 57 | 43 | 40 | 75 | 43 | 18 | 100 | 100 | 75 | 75 |
| S | 100 | 80 | 69 | 86 | 100 | 86 | 71 | 70 | 100 | 71 | 47 | 100 | 100 | 100 | 100 |
| **1PUUb** | I | 60 | 33 | 50 | 33 | 60 | 67 | 50 | 40 | 50 | 25 | 37 | 71 | 67 | 56 | 100 |
| S | 80 | 67 | 75 | 67 | 60 | 100 | 100 | 60 | 67 | 100 | 62 | 71 | 83 | 78 | 100 |
| **1YF8a** | I | 60 | 60 | 50 | 60 | 100 | 60 | 43 | 43 | 43 | 43 | 100 | 44 | 100 | 64 | 75 |
| **S** | 100 | 100 | 83 | 80 | 100 | 80 | 86 | 64 | 86 | 71 | 100 | 78 | 100 | 15 | 100 |
| **1YF8b** | **I** | 25 | 33 | 19 | 31 | 60 | 50 | 100 | 43 | 50 | 25 | 37 | 71 | 67 | 80 | 33 |
| **S** | 62 | 67 | 81 | 69 | 60 | 83 | 100 | 86 | 67 | 100 | 62 | 71 | 83 | 80 | 100 |
| **2R9Ka** | **I** | 60 | 60 | 33 | 100 | 100 | 57 | 43 | 50 | 75 | 43 | 18 | 100 | 100 | 75 | 50 |
| **S** | 100 | 80 | 78 | 100 | 100 | 86 | 86 | 75 | 100 | 71 | 47 | 100 | 100 | 100 | 75 |
| **2R9Kb** | **I** | 75 | 33 | 19 | 33 | 60 | 67 | 50 | 40 | 57 | 29 | 37 | 71 | 67 | 56 | 100 |
| **S** | 100 | 67 | 81 | 60 | 60 | 100 | 100 | 60 | 71 | 86 | 62 | 71 | 83 | 78 | 100 |

**Note-** PDB ID- Protein data bank ID; I/S- Identity/Similarity

**FILE 4**

Sequence similarity between trypsin digested LC-MS/ESI-MS peptide sequences of ARIP-B with known RIPs in Magnoliophyta

| **Family** | **Plant** | **PDB ID** | | **I/S** | **Peptides** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | | **2** | | **3,7,8** | | **4** | | **5,6** | | **9** | | **10** | | **11** | | **12** | | **13** | | **14,15** | | **16** | | **17** | | **18** |
| **Caryophyllaceae** | ***Dianthus caryophyllus (Clove pink)*** | **1RL0** | | **I** | 37 | | 44 | | 17 | | 17 | | 57 | | 17 | | 57 | | 100 | | 50 | | 44 | | 37 | | 50 | | 50 | | 57 |
| **S** | 75 | | 69 | | 83 | | 82 | | 57 | | 83 | | 57 | | 100 | | 100 | | 78 | | 75 | | 87 | | 100 | | 71 |
| ***Lychnis chalcedonica (Scarlet lychnis)*** | **2G5X** | | **I** | 80 | | 37 | | 67 | | 33 | | 33 | | 33 | | 100 | | 40 | | 40 | | 56 | | 33 | | 100 | | 67 | | 33 |
| **S** | 80 | | 69 | | 100 | | 100 | | 100 | | 100 | | 100 | | 100 | | 80 | | 78 | | 67 | | 100 | | 100 | | 75 |
| **Curcubitaceae** | ***Trichosanthus kirilkii (Mongolian snake-gourd)*** | **1TCS** | | **I** | 57 | | 57 | | 67 | | 33 | | 60 | | 40 | | 43 | | 100 | | 50 | | 43 | | 67 | | 37 | | 43 | | 43 |
| **S** | 71 | | 86 | | 100 | | 83 | | 80 | | 80 | | 71 | | 100 | | 83 | | 57 | | 100 | | 87 | | 57 | | 57 |
| ***Momordica balsamina (Balsam apple)*** | **3N31** | | **I** | 100 | | 31 | | 67 | | 67 | | 60 | | 60 | | 44 | | 40 | | 100 | | 60 | | 43 | | 50 | | 50 | | 36 |
| **S** | 100 | | 61 | | 100 | | 100 | | 80 | | 80 | | 67 | | 100 | | 100 | | 80 | | 86 | | 83 | | 100 | | 54 |
| ***Momordica charantia (Balsam pear)*** | **1AHA** | | **I** | 100 | | 31 | | 67 | | 67 | | 60 | | 60 | | 44 | | 40 | | 80 | | 60 | | 50 | | 29 | | 25 | | 36 |
| **S** | 100 | | 65 | | 100 | | 100 | | 80 | | 80 | | 67 | | 100 | | 80 | | 80 | | 62 | | 86 | | 87 | | 64 |
| **1MRG** | | **I** | 100 | | 37 | | 67 | | 67 | | 60 | | 60 | | 44 | | 40 | | 80 | | 60 | | 50 | | 29 | | 50 | | 83 |
| **S** | 100 | | 62 | | 100 | | 100 | | 80 | | 80 | | 67 | | 100 | | 80 | | 80 | | 62 | | 86 | | 100 | | 83 |
| ***Momordica balsamina (Bitter gourd)*** | **3MRY** | | **I** | 100 | | 31 | | 67 | | 67 | | 60 | | 60 | | 44 | | 40 | | 100 | | 60 | | 43 | | 50 | | 50 | | 36 |
| **S** | 100 | | 61 | | 100 | | 100 | | 80 | | 80 | | 67 | | 100 | | 100 | | 80 | | 86 | | 83 | | 100 | | 54 |
| ***Cucurbita moschata (Sarcocarp of pumpkin)*** | **3BWH** | | **I** | 100 | | 57 | | 33 | | 33 | | 50 | | 50 | | 44 | | 100 | | 57 | | 50 | | 43 | | 50 | | 22 | | 36 |
| **S** | 100 | | 86 | | 83 | | 83 | | 83 | | 83 | | 79 | | 100 | | 86 | | 60 | | 86 | | 83 | | 89 | | 54 |
| **Euphorbiaceae** | ***Ricinus communis (Castor bean)*** | **1RTC** | | **I** | 67 | | **47** | | 33 | | 50 | | 50 | | 67 | | 50 | | 60 | | 50 | | 50 | | 60 | | 50 | | 50 | | 36 |
|  | | **S** | 67 | | 67 | | 100 | | 100 | | 100 | | 100 | | 67 | | 100 | | 75 | | 62 | | 100 | | 62 | | 83 | | 54 |
| **1IFS** | | **I** | 67 | | 47 | | 33 | | 50 | | 50 | | 67 | | 50 | | 60 | | 50 | | 50 | | 60 | | 50 | | 50 | | 36 |
|  | | **S** | 67 | | 67 | | 100 | | 100 | | 100 | | 100 | | 67 | | 100 | | 75 | | 62 | | 100 | | 62 | | 83 | | 54 |
| **2AAIa** | | **I** | 67 | | 47 | | 33 | | 50 | | 50 | | 67 | | 50 | | 60 | | 50 | | 50 | | 60 | | 50 | | 25 | | 36 |
|  | | **S** | 67 | | 67 | | 100 | | 100 | | 100 | | 100 | | 67 | | 100 | | 75 | | 62 | | 100 | | 62 | | 75 | | 54 |
| **2AAIb** | | **I** | 43 | | 29 | | 67 | | 100 | | 67 | | 100 | | 71 | | 50 | | 50 | | 57 | | 100 | | 75 | | 25 | | 39 |
|  | | **S** | 86 | | 57 | | 100 | | 100 | | 100 | | 100 | | 86 | | 100 | | 67 | | 71 | | 100 | | 75 | | 75 | | 70 |
| **Fabaceae** | ***Abrus precatorious (Indian licorice)*** | **1ABRa** | **I** | 100 | | 36 | | 67 | | 60 | | 60 | | 50 | | 100 | | 57 | | 40 | | 25 | | 67 | | 60 | | 25 | | 100 | | |
| **S** | 100 | | 59 | | 100 | | 100 | | 80 | | 83 | | 100 | | 71 | | 80 | | 62 | | 100 | | 80 | | 75 | | 100 | | |
| **1ABRb** | **I** | 29 | | 29 | | 50 | | 40 | | 75 | | 40 | | 50 | | 67 | | 50 | | 57 | | 100 | | 60 | | 25 | | 43 | | |
| **S** | 71 | | 54 | | 75 | | 80 | | 75 | | 80 | | 62 | | 100 | | 50 | | 71 | | 100 | | 80 | | 75 | | 86 | | |
| **2Q3Na** | **I** | 36 | | 29 | | 75 | | 50 | | 67 | | 67 | | 43 | | 43 | | 60 | | 40 | | 50 | | 43 | | 75 | | 33 | | |
| **S** | 73 | | 47 | | 100 | | 83 | | 83 | | 83 | | 71 | | 71 | | 80 | | 70 | | 75 | | 100 | | 75 | | 79 | | |
| **2Q3Nb** | **I** | 40 | | 31 | | 40 | | 33 | | 40 | | 33 | | 44 | | 100 | | 50 | | 57 | | 37 | | 60 | | 100 | | 43 | | |
| **S** | 100 | | 62 | | 100 | | 100 | | 100 | | 100 | | 68 | | 100 | | 75 | | 71 | | 50 | | 80 | | 100 | | 71 | | |
| **2ZRIa** | **I** | 36 | | 29 | | 75 | | 50 | | 67 | | 67 | | 43 | | 43 | | 60 | | 40 | | 50 | | 43 | | 75 | | 33 | | |
| **S** | 73 | | 47 | | 100 | | 83 | | 83 | | 83 | | 71 | | 71 | | 80 | | 70 | | 75 | | 100 | | 75 | | 79 | | |
| **2ZRIb** | **I** | 40 | | 31 | | 40 | | 33 | | 40 | | 33 | | 44 | | 100 | | 50 | | 57 | | 37 | | 60 | | 100 | | 43 | | |
| **S** | 100 | | 62 | | 100 | | 100 | | 100 | | 100 | | 67 | | 100 | | 75 | | 71 | | 50 | | 80 | | 100 | | 71 | | |
| **Hyacinthaceae** | ***Charybdis maritime (Sea squil)*** | **2B7U** | **I** | 57 | | 32 | | 57 | | 67 | | 80 | | 50 | | 31 | | 43 | | 57 | | 60 | | 44 | | 29 | | 50 | | 43 | | |
| **S** | 57 | | 68 | | 71 | | 100 | | 80 | | 100 | | 85 | | 86 | | 71 | | 100 | | 89 | | 86 | | 100 | | 71 | | |
| **Nyctaginaceae** | ***Bougainvillea spectabilis (Great Bougainvillea)*** | **3CTK** | **I** | 46 | | 32 | | 75 | | 33 | | 75 | | 40 | | 100 | | 29 | | 37 | | 60 | | 56 | | 43 | | 29 | | 75 | | |
| **S** | 61 | | 63 | | 100 | | 83 | | 100 | | 80 | | 100 | | 86 | | 62 | | 80 | | 89 | | 100 | | 86 | | 100 | | |
| **Phytolaccaceae** | ***Phytolacca americana (American pokeweed)*** | **1LLN** | **I** | 44 | | 23 | | 50 | | 50 | | 50 | | 50 | | 50 | | 50 | | 60 | | 33 | | 57 | | 60 | | 67 | | 60 | | |
| **S** | 67 | | 64 | | 67 | | 67 | | 67 | | 67 | | 83 | | 100 | | 60 | | 83 | | 86 | | 100 | | 83 | | 80 | | |
| **1GIK** | **I** | 100 | | 27 | | 75 | | 50 | | 100 | | 75 | | 50 | | 50 | | 43 | | 67 | | 43 | | 43 | | 30 | | 45 | | |
| **S** | 100 | | 58 | | 100 | | 100 | | 100 | | 100 | | 83 | | 100 | | 71 | | 100 | | 71 | | 86 | | 80 | | 64 | | |
| **1QCG** | **I** | 100 | | 25 | | 75 | | 50 | | 100 | | 75 | | 50 | | 50 | | 50 | | 33 | | 56 | | 37 | | 30 | | 45 | | |
| **S** | 100 | | 53 | | 100 | | 100 | | 100 | | 100 | | 83 | | 100 | | 67 | | 83 | | 56 | | 75 | | 80 | | 73 | | |
| ***Phytolacca dioica (Bella sombra tree)*** | **2QES** | **I** | 100 | | 23 | | 75 | | 50 | | 100 | | 75 | | 29 | | 50 | | 60 | | 83 | | 36 | | 37 | | 37 | | 45 | | |
| **S** | 100 | | 68 | | 100 | | 100 | | 100 | | 100 | | 86 | | 100 | | 100 | | 100 | | 64 | | 75 | | 75 | | 64 | | |
| **3H5Ka** | **I** | 100 | | 25 | | 75 | | 50 | | 100 | | 75 | | 57 | | 50 | | 43 | | 67 | | 33 | | 43 | | 30 | | 54 | | |
| **S** | 100 | | 59 | | 100 | | 100 | | 100 | | 100 | | 86 | | 100 | | 71 | | 100 | | 83 | | 86 | | 80 | | 64 | | |
| ***Phytolacca accinosa (Pokeweed seeds)*** | **2Q8W** | **I** | 100 | | 25 | | 25 | | 50 | | 100 | | 75 | | 50 | | 50 | | 100 | | 67 | | 43 | | 43 | | 40 | | 45 | | |
| **S** | 100 | | 56 | | 56 | | 100 | | 100 | | 100 | | 83 | | 100 | | 100 | | 100 | | 71 | | 86 | | 90 | | 64 | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Plant** | **PDB ID** | **I/S** | **Peptides** | | | | | | | | | | | | | |
| **1** | **2** | **3,7,8** | **4** | **5,6** | **9** | **10** | **11** | **12** | **13** | **14,15** | **16** | **17** | **18** |
| **Viscaceae** | ***Viscum album (European mistletoe)*** | **1CE7a** | **I** | 57 | 25 | 43 | 29 | 67 | 60 | 75 | 40 | 50 | 80 | 57 | 67 | 60 | 36 |
| **S** | 71 | 75 | 86 | 86 | 100 | 80 | 75 | 80 | 67 | 80 | 86 | 67 | 100 | 82 |
| **1CE7b** | **I** | 50 | 83 | 40 | 40 | 40 | 33 | 42 | 100 | 100 | 57 | 50 | 37 | 40 | 25 |
| **S** | 83 | 100 | 80 | 80 | 80 | 100 | 58 | 100 | 100 | 71 | 83 | 87 | 80 | 75 |
| **1M2Ta** | **I** | 60 | 44 | 43 | 67 | 67 | 60 | 75 | 40 | 50 | 80 | 57 | 50 | 60 | 67 |
| **S** | 100 | 56 | 86 | 100 | 100 | 80 | 75 | 80 | 67 | 80 | 86 | 83 | 80 | 83 |
| **1M2Tb** | **I** | 75 | 83 | 100 | 100 | 100 | 100 | 42 | 75 | 67 | 40 | 67 | 37 | 40 | 25 |
| **S** | 100 | 100 | 100 | 100 | 100 | 100 | 58 | 75 | 100 | 80 | 100 | 87 | 60 | 75 |
| **1OQLa** | I | 60 | 26 | 43 | 29 | 67 | 60 | 75 | 40 | 43 | 80 | 60 | 50 | 60 | 67 |
| S | 100 | 55 | 86 | 86 | 100 | 100 | 75 | 80 | 86 | 80 | 80 | 83 | 80 | 83 |
| **1OQLb** | I | 25 | 83 | 40 | 40 | 40 | 100 | 42 | 75 | 67 | 57 | 50 | 37 | 40 | 25 |
| S | 62 | 100 | 80 | 80 | 80 | 100 | 58 | 75 | 100 | 71 | 83 | 87 | 60 | 75 |
| **1PC8a** | I | 60 | 40 | 43 | 29 | 67 | 60 | 75 | 40 | 43 | 80 | 60 | 50 | 60 | 50 |
| S | 100 | 80 | 86 | 86 | 100 | 100 | 75 | 80 | 86 | 80 | 80 | 83 | 80 | 67 |
| **1PC8b** | I | 25 | 83 | 40 | 40 | 40 | 100 | 25 | 75 | 100 | 57 | 50 | 37 | 40 | 25 |
| S | 62 | 100 | 80 | 80 | 80 | 100 | 67 | 75 | 100 | 57 | 83 | 87 | 80 | 75 |
| **1PUMa** | I | 60 | 26 | 43 | 29 | 67 | 60 | 75 | 40 | 50 | 80 | 57 | 57 | 60 | 67 |
| S | 100 | 61 | 86 | 86 | 100 | 80 | 75 | 80 | 67 | 80 | 86 | 86 | 80 | 83 |
| **1PUMb** | I | 60 | 83 | 40 | 40 | 40 | 100 | 42 | 75 | 43 | 57 | 67 | 37 | 40 | 25 |
| S | 80 | 100 | 80 | 80 | 80 | 100 | 58 | 75 | 71 | 71 | 100 | 87 | 60 | 75 |
| **1PUUa** | I | 60 | 44 | 43 | 50 | 67 | 60 | 75 | 40 | 50 | 80 | 57 | 50 | 60 | 67 |
| S | 100 | 62 | 86 | 75 | 100 | 80 | 75 | 80 | 67 | 80 | 86 | 83 | 80 | 83 |
| **1PUUb** | I | 60 | 83 | 100 | 100 | 100 | 100 | 42 | 75 | 43 | 57 | 57 | 37 | 40 | 25 |
| S | 80 | 100 | 100 | 100 | 100 | 100 | 58 | 75 | 71 | 71 | 100 | 87 | 60 | 75 |
| **1YF8a** | I | 60 | 40 | 43 | 29 | 67 | 60 | 75 | 40 | 43 | 80 | 60 | 50 | 60 | 50 |
| **S** | 80 | 80 | 86 | 86 | 100 | 100 | 75 | 80 | 86 | 80 | 80 | 83 | 80 | 67 |
| **1YF8b** | **I** | 25 | 83 | 40 | 40 | 40 | 100 | 25 | 75 | 100 | 57 | 50 | 37 | 40 | 25 |
| **S** | 62 | 100 | 80 | 80 | 80 | 100 | 67 | 75 | 100 | 57 | 83 | 87 | 80 | 75 |
| **2R9Ka** | **I** | 60 | 44 | 43 | 67 | 67 | 60 | 75 | 40 | 50 | 80 | 57 | 50 | 60 | 67 |
| **S** | 100 | 56 | 86 | 100 | 100 | 80 | 75 | 80 | 67 | 80 | 86 | 86 | 80 | 83 |
| **2R9Kb** | **I** | 75 | 83 | 100 | 100 | 100 | 100 | 42 | 75 | 67 | 40 | 67 | 37 | 40 | 25 |
| **S** | 100 | 100 | 100 | 100 | 100 | 100 | 58 | 75 | 100 | 80 | 100 | 87 | 60 | 75 |

**Note-** PDB ID- Protein data bank ID; I/S- Identity/Similarity