**Supplementary Table S2.** List of candidate mucinasesof *A. muciniphila* (ATCC strain BAA-835/DSM 22959/JCM 33894/BCRC 81048/CCUG 64013/CIP 107961/Muc) searched in the Uniprot database.

|  |  |  |  |
| --- | --- | --- | --- |
| **Entry Name** | **Protein names** | **Gene Names** | **Amino acids** |
| B2UPI7\_AKKM8 | Peptidase M60 domain-containing protein | Amuc\_0627 | 506 |
| B2UQK5\_AKKM8 | Peptidase M60 domain-containing protein | Amuc\_0908 | 747 |
| B2ULE8\_AKKM8 | Peptidase M60 domain-containing protein | Amuc\_1514 | 660 |
| B2UR60\_AKKM8 | Peptidase\_M43 domain-containing protein | Amuc\_1119 | 385 |
| B2UME7\_AKKM8 | Peptidase M23 | Amuc\_0253 | 289 |
| B2UNB8\_AKKM8 | Peptidase M23 | Amuc\_0391 | 225 |
| B2UNJ1\_AKKM8 | Peptidase M23 | Amuc\_0465 | 347 |
| B2UR47\_AKKM8 | Peptidase M24 | Amuc\_1106 | 427 |
| B2UM82\_AKKM8 | Peptidase M28 | Amuc\_0187 | 356 |
| B2ULX6\_AKKM8 | Peptidase S1 and S6 chymotrypsin/Hap | Amuc\_0176 | 334 |
| B2UMQ3\_AKKM8 | Peptidase S1 and S6 chymotrypsin/Hap | Amuc\_1791 | 254 |
| B2UL29\_AKKM8 | Peptidase S11 D-alanyl-D-alanine carboxypeptidase 1 | Amuc\_1480 | 323 |
| B2UN08\_AKKM8 | Peptidase S15 | Amuc\_1801 | 359 |
| B2UP79\_AKKM8 | Oligopeptidase A (EC 3.4.24.70) | Amuc\_2040 | 726 |
| B2UM07\_AKKM8 | Carboxyl-terminal protease (EC 3.4.21.102) | Amuc\_1631 | 748 |
| B2ULK5\_AKKM8 | Peptidase M22 glycoprotease | Amuc\_1571 | 222 |
| B2ULJ2\_AKKM8 | Zinc metalloprotease (EC 3.4.24.-) | Amuc\_1558 | 481 |
| B2UNU1\_AKKM8 | Aspartyl protease | Amuc\_0473 | 323 |
| B2UNU3\_AKKM8 | Methyltransferase | Amuc\_0475 | 191 |
| B2UP74\_AKKM8 | ULP\_PROTEASE domain-containing protein | Amuc\_2035 | 251 |
| B2UPX2\_AKKM8 | Trypsin-like protein serine protease typically periplasmic contain C-terminal PDZ domain-like protein | Amuc\_0670 | 526 |
| B2UQG2\_AKKM8 | Sulfatase | Amuc\_0864 | 572 |
| B2UQQ0\_AKKM8 | Sulfatase | Amuc\_0953 | 1414 |
| B2UQX4\_AKKM8 | Sulfatase | Amuc\_1033 | 581 |
| B2UR15\_AKKM8 | Sulfatase | Amuc\_1074 | 552 |
| B2UR59\_AKKM8 | Sulfatase | Amuc\_1118 | 628 |
| B2URC2\_AKKM8 | Sulfatase | Amuc\_1182 | 465 |
| B2ULS2\_AKKM8 | Sulfatase | Amuc\_0121 | 526 |
| B2UM30\_AKKM8 | Sulfatase | Amuc\_1655 | 554 |
| B2UML7\_AKKM8 | Sulfatase | Amuc\_1755 | 562 |
| B2UNH7\_AKKM8 | Sulfatase | Amuc\_0451 | 719 |
| B2UNV9\_AKKM8 | Sulfatase | Amuc\_0491 | 500 |
| B2UPC5\_AKKM8 | Sulfatase | Amuc\_0565 | 542 |
| B2UPP3\_AKKM8 | Formylglycine-generating enzyme, required for sulfatase activity, contains SUMF1/FGE domain | Amuc\_2112 | 969 |
| B2ULI1\_AKKM8 | Sialidase domain-containing protein | Amuc\_1547 | 595 |
| B2UN42\_AKKM8 | Exo-alpha-sialidase (EC 3.2.1.18) | Amuc\_1835 | 674 |
| B2UPI5\_AKKM8 | Exo-alpha-sialidase (EC 3.2.1.18) | Amuc\_0625 | 419 |
| B2UPI3\_AKKM8 | Glycosyl hydrolase BNR repeat-containing protein | Amuc\_0623 | 436 |
| G1091\_AKKM8 | Glycosyl hydrolase family 109 protein 1 (EC 3.2.1.-) | Amuc\_0017 | 481 |
| G1092\_AKKM8 | Glycosyl hydrolase family 109 protein 2 (EC 3.2.1.-) | Amuc\_0920 | 473 |
| B2UKY7\_AKKM8 | Glycosyl hydrolase family 98 putative carbohydrate binding module | Amuc\_1438 | 639 |
| B2UQG1\_AKKM8 | Glycosyl hydrolase family 88 | Amuc\_0863 | 744 |
| B2UPN9\_AKKM8 | Glycoside hydrolase family 16 | Amuc\_2108 | 319 |
| B2UMS6\_AKKM8 | Glycoside hydrolase family 2 sugar binding | Amuc\_0290 | 986 |
| B2UQH3\_AKKM8 | Glycoside hydrolase family 16 | Amuc\_0875 | 313 |
| B2UM81\_AKKM8 | Glycoside hydrolase family 95 | Amuc\_0186 | 788 |
| B2UR61\_AKKM8 | Glycosyl hydrolase | Amuc\_1120 | 796 |
| B2UPU3\_AKKM8 | Glycoside hydrolase family 18 | Amuc\_2164 | 1233 |
| B2UNV0\_AKKM8 | Hydrolase of the alpha/beta superfamily | Amuc\_0482 | 272 |
| B2UQU5\_AKKM8 | Hydrolase of the alpha/beta superfamily | Amuc\_1003 | 377 |
| B2ULB7\_AKKM8 | Alpha-N-acetylglucosaminidase (EC 3.2.1.50) | Amuc\_0060 | 848 |
| B2URG0\_AKKM8 | Alpha-N-acetylglucosaminidase (EC 3.2.1.50) | Amuc\_1220 | 852 |
| B2UPZ9\_AKKM8 | Beta-glucanase | Amuc\_0697 | 381 |
| B2UQ00\_AKKM8 | Beta-glucanase | Amuc\_0698 | 369 |
| GLAA\_AKKM8 | Alpha-1,3-galactosidase A (EC 3.2.1.n1) (Exo-alpha-galactosidase A) (EC 3.2.1.22) | Amuc\_1463 | 596 |
| GLAB\_AKKM8 | Alpha-1,3-galactosidase B (EC 3.2.1.n1) (EC 3.2.1.n2) (Exo-alpha-galactosidase B) (EC 3.2.1.22) | Amuc\_0480 | 794 |
| B2UQF3\_AKKM8 | Alpha-galactosidase (EC 3.2.1.22) | Amuc\_0855 | 716 |
| B2URC7\_AKKM8 | Alpha-galactosidase (EC 3.2.1.22) (Melibiase) | Amuc\_1187 | 533 |
| B2UM40\_AKKM8 | Beta-galactosidase (EC 3.2.1.23) (Lactase) | Amuc\_1666 | 1289 |
| B2UM60\_AKKM8 | Beta-galactosidase (EC 3.2.1.23) | Amuc\_1686 | 780 |
| B2UQ71\_AKKM8 | Beta-galactosidase (EC 3.2.1.23) | Amuc\_0771 | 643 |
| B2UQ26\_AKKM8 | Glucan endo-1,3-beta-D-glucosidase (EC 3.2.1.39) | Amuc\_0724 | 290 |
| B2UQC2\_AKKM8 | beta-galactosidase (EC 3.2.1.23) (Lactase) | Amuc\_0824 | 1264 |
| B2UL68\_AKKM8 | Alpha-L-fucosidase (EC 3.2.1.51) | Amuc\_0010 | 538 |
| B2ULU6\_AKKM8 | Alpha-L-fucosidase (EC 3.2.1.51) | Amuc\_0146 | 711 |
| B2UNB9\_AKKM8 | Coagulation factor 5/8 type domain protein | Amuc\_0392 | 709 |
| B2UQE4\_AKKM8 | Coagulation factor 5/8 type domain protein | Amuc\_0846 | 704 |
| H2018\_AKKM8 | Beta-hexosaminidase Amuc\_2018 (EC 3.2.1.52) (Beta-N-acetylhexosaminidase Am2301) | Amuc\_2018 | 493 |
| H2136\_AKKM8 | Beta-hexosaminidase Amuc\_2136 (EC 3.2.1.52) (Beta-N-acetylhexosaminidase Am2136) | Amuc\_2136 | 756 |
| H0868\_AKKM8 | Beta-hexosaminidase Amuc\_0868 (EC 3.2.1.52) (Beta-N-acetylhexosaminidase Am0868) | Amuc\_0868 | 549 |
| B2UM43\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_1669 | 547 |
| B2UN02\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_0369 | 665 |
| B2UN22\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_1815 | 728 |
| B2UNC4\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_0397 | 722 |
| B2UNM1\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_1924 | 664 |
| B2UP58\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_2019 | 504 |
| B2UPP0\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_2109 | 353 |
| B2UPS8\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_2148 | 549 |
| B2UQX3\_AKKM8 | Beta-N-acetylhexosaminidase (EC 3.2.1.52) | Amuc\_1032 | 518 |
| B2UPX9\_AKKM8 | Beta-hexosaminidase | Amuc\_0677 | 159 |
| B2UPX2\_AKKM8 | Trypsin-like protein serine protease typically periplasmic contain C-terminal PDZ domain-like protein | Amuc\_0670 | 526 |