A putative N-BAR-domain protein is crucially required for the development of hyphae tip appressorium-like structure and its plant infection in *Magnaporthe oryzae*

Lili Lin1\*, Xiaomin Chen1\*, Ammarah Shabbir1, Si Chen1, Xuewen Chen1, Zonghua Wang1, 2#, and Justice Norvienyeku1#

1. State Key Laboratory for Ecological Pest Control of Fujian and Taiwan Crops, College of Life Science, Fujian Agriculture and Forestry University, Fuzhou, 350002, China
2. Institute of Oceanography, Minjiang University, Fuzhou, 350108, China

**List of Supplementary Figures and Tables**



Figure S1: Phylogeny of Magnaporthe. oryzae Bar-A and Bar-B with fungi species across taxonomic groups (a) Maximum Likelihood phylogenetic relationship between M. oryzae Bar-A and Bar-A identified in fungal species from different taxon (b) Maximum Likelihood phylogenetic relationship between M. oryzae Bar-A and Bar-A identified in fungal species from different taxon. The Maximum Likelihood phylogeny for Bar-A and Bar-B were tested with 1000 bootstrap replicates.

.

**Table S1:** Full genus and species nomenclature of fungi groupings that were used in maximum likelihood neighbor joining tree for Bar-A and Bar-B

|  |  |
| --- | --- |
| Full genus and species name | Abbreviated name |
| *Aspergillus aculeatus ATCC 16872* | *A. aculeatus ATCC 16872* |
| *Aspergillus campestris IBT 28561* | *A. campestris IBT 28561* |
| *Aspergillus wentii DTO 134E9* | *A. wentii DTO**134E9* |
| *Aspergillus terreus NIH2624* | *A. terreus NIH2624* |
| *Aspergillus fischeri NRRL 181* | *A. fischeri NRRL 181* |
| *Aspergillus fumigatus Af293* | *A. fumigatus Af293* |
| *Aspergillus fumigatus A1163* | *A. fumigatus A1163* |
| *Aspergillus flavus NRRL3357* | *A. flavus NRRL3357* |
| *Aspergillus niger strain N402 (ATCC64974)* | *A. niger strain N402 (ATCC64974)* |
| *Aspergillus niger CBS 513*  | *A. niger CBS 513* |
| *Aspergillus nidulans FGSC A4* | *A. nidulans FGSC A4* |
| *Aspergillus ochraceoroseus IBT 24754* | *A. ochraceoroseus IBT 24754* |
| *Aspergillus oryzae RIB40* | *A. oryzae RIB40* |
| *Aspergillus glaucus CBS 516.65* | *A. glaucus CBS 516.65* |
| *Aspergillus versicolor CBS 583.65* | *A. versicolor CBS 583.65* |
| *Aspergillus steynii IBT 23096* | *A. steynii IBT 23096* |
| *Aspergillus sydowii CBS 593.65* | *A. sydowii CBS 593.65* |
| *Botrytis cinerea B05* | *B. cinerea B05* |
| *Coccidioides posadasii str. Silveira* | *C. posadasii str. Silveira* |
| *Coccidioides posadasii C735 delta SOWgp* | *C. posadasii C735 delta SOWgp* |
| *Coccidioides immitis RS* | *C. immitis RS* |
| *Coccidioides immitis H538.4* | *C. immitis H538.4* |
| *Coccidioides posadasii RMSCC 3488* | *C. posadasii RMSCC 3488* |
| *Exophiala oligosperma strain CBS 72588* | *E. oligosperma strain CBS* ***72588*** |
| *Fusarium fujikuroi IMI 58289* | *F. fujikuroi IMI 58289* |
| *Fusarium graminearum PH-1* | *F. graminearum PH-1* |
| *Fusarium oxysporum f. sp. cubense race 1* | *F. oxysporum f. sp. cubense race 1* |
| *Fusarium oxysporum f. sp. cubense race 4* | *F. oxysporum f. sp. cubense race 4* |
| *Fusarium oxysporum f. sp. cubense tropical race 4 54006* | *F. oxysporum f. sp. cubense tropical race 4 54006* |
| *Fusarium oxysporum Fo47* | *F. oxysporum Fo47* |
| *Fusarium oxysporum f. sp. lycopersici 4287* | *F. oxysporum f. sp. lycopersici 4287* |
| *Fusarium oxysporum FOSC 3-a* | *F. oxysporum FOSC 3-a* |
| *Fusarium oxysporum f. sp. melonis 26406* | *F. oxysporum f. sp. melonis 26406* |
| *Fusarium verticillioides 7600* | *F. verticillioides 7600* |
| *Fonsecaea pedrosoi CBS 271* | *F. pedrosoi CBS 271* |
| *Fusarium proliferatum ET1* | *F. proliferatum ET1* |
| *Fusarium proliferatum strain NRRL62905* | *F. proliferatum strain NRRL62905* |
| *Histoplasma capsulatum G217B* | *H. capsulatum G217B* |
| *Histoplasma capsulatum G186AR* | *H. capsulatum G186AR* |
| *Histoplasma capsulatum H143* | *H. capsulatum H143* |
| *Histoplasma capsulatum H88* | *H. capsulatum H88* |
| *Lomentospora prolificans JHH-5317* | *L. prolificans JHH-531****7*** |
| *Magnaporthe oryzae 70-15* | *M. oryzae 70-15* |
| *Magnaporthe oryzae BR32* | *M. oryzae BR32* |
| *Neurospora crassa OR74A* | *N. crassa OR74A* |
| *Neurospora discreta FGSC 8579* | *N. discreta FGSC 8579* |
| *Neurospora tetrasperma FGSC 2508* | *N. tetrasperma FGSC 2508* |
| *Paracoccidioides brasiliensis Pb03* | *P. brasiliensis Pb03* |
| *Paracoccidioides brasiliensis Pb18* | *P. brasiliensis Pb18* |
| *Paracoccidioides lutzii Pb01* | *P. lutzii Pb01* |
| *Scedosporium apiospermum IHEM 14462* | *S. apiospermum IHEM 14462* |
| *Sporothrix brasiliensis 5110* | *S. brasiliensis 5110* |
| *Sclerotinia sclerotiorum 1980 UF-70* | *S. sclerotiorum 1980 UF-70* |
| *Sporothrix schenckii 1099-18* | *S. schenckii 1099-18* |
| *Sordaria macrospora k-hell* | *S. macrospora k-hell* |
| *Talaromyces stipitatus ATCC 10500* | *T. stipitatus ATCC 10500* |
| *Uncinocarpus reesii 1704* | *U. reesii 1704* |

**Table S2: List of primers used in this study**

|  |  |
| --- | --- |
| **Primer Name** | **Primer Sequence(5'-3')** |
| BAR-A AF | GAACAAAAGCTGGGTGGGGACGATAGTAAGCC |
| BAR-A AR | CAGCGGCGCGCCGAACAAGAGGTTGGTGGAGG |
| BAR-A BF | ACCGGGCCGGCCGGA GCGGGATTTCTTAGGGT |
| BAR-A BR | GGTGGCGGCCGCTCTCTGGGTGTTGCTGTTCG |
| BAR-A OF | CCACGGAGAAGACTTTGAGA |
| BAR-A OR | GCTGCCGCTAGTGTTTGT |
| BAR-A UAF | TGACGCAGAACTCAAGGC |
| BAR-A UAR | CATCGGCGCAGCTATTT |
| BAR-A\_COMF | GAACAAAAGCTGGGTTGCCCCTCACCACCCTC |
| BAR-A \_COMR | CTGCAGGCATGCAAGGTAGAGCACCTCTCGCTTTGC |
| BAR-B AF | GAACAAAAGCTGGGT GGTTGCGACTGACGGATAT |
| BAR-B AR | CAGCGGCGCGCCGAA TTGGTTGTTGATGCGATGT |
| BAR-B BF | ACCGGGCCGGCCGGA GCATTGCGGTATTAAACG |
| BAR-B BR | GGTGGCGGCCGCTCT GCAGAGTCAGGTCGAAGG |
| BAR-B OF | ACATCACGTATGTCGATTCA |
| BAR-B OR | CTTACGGTAGCTCGCCTACA |
| BAR-B UAF | TTCGGGAAGAACCACTCA |
| BAR-B UAR | CGTCTGCTGCTCCATACAA |
| BAR-B \_COMF | GAACAAAAGCTGGGTGGTCGTTGTTGCGCTTACCA |
| BAR-B \_COMR | CTGCAGGCATGCAAGAGAGGCGCTCTCACGGCTCT |
| BAR-B\_D AF | GGTTGCGACTGACGGATAT |
| BAR-B\_D AR | ATTGTAAGCGTTAATCTAGATTGGTTGTTGATGCGATGT |
| BAR-B\_D BF | TTCTTGACGAGTTCTTCTGAGCATTGCGGTATTAAACG |
| BAR-B\_D BR | GCAGAGTCAGGTCGAAGG |
| BAR-B\_D UAF | GGCGGACCACCTGCAAACA |
| BAR-B\_D UAR | AACACGGCGGCATCAGAGC |
| BAR-A\_BDF | CTGATCTCAGAGGAGGACCTGCATATGAAGATTTCCACTCCAGGCA |
| BAR-A\_BDR | CGCTGCAGGTCGACGGATCCCCGGGAACTAGTAGAGCACCTCTCGCTTTG |
| BAR-B\_BDF | CTGATCTCAGAGGAGGACCTGCATATGGATTTCAAGAACTTTGGCAAC  |
| BAR-B\_BDR | CGCTGCAGGTCGACGGATCCCCGGGAATCAAGAGGCGCTCTCACGG |
| BAR-B\_ADF | GACGTACCAGATTACGCTCATATGGATTTCAAGAACTTTGGCAAC  |
| BAR-B\_ADR | TATCGATGCCCACCCGGGTGGAATCAAGAGGCGCTCTCACGG |
| OBPS1\_ADF | GACGTACCAGATTACGCTCATATGTCGGAAGCCGGCGATAGC |
| OBPS1\_ADR | GACGTACCAGATTACGCTCATTTACGAAGCATCTTCGTAAATCGGC |
| OBPS2\_ADF | GACGTACCAGATTACGCTCAT ATGGCTGGCATCGAG |
| OBPS2\_ADR | GACGTACCAGATTACGCTCATCTACTGCTTGAAGATATCT |
| OBPS4\_ADF | GACGTACCAGATTACGCTCATATGGATTCAAAATCTTTGGCGTCTC |
| OBPS4\_ADR | GACGTACCAGATTACGCTCATTCACCCAAGAGGCGTCAACTCC |
| VTI1\_ADF | GACGTACCAGATTACGCTCATATGTCCAACCCCCTCGACGC |
| VTI1\_ADR | GACGTACCAGATTACGCTCATCTACCTGAACTTGCTAACAATGACG |
| VTI1\_ADF | GACGTACCAGATTACGCTCATATGGCCGTCGCGTCGGTCCAA |
| VTI1\_ADR | GACGTACCAGATTACGCTCATCTATCCCGCAATGAGAACCCA |
| VAM4\_ADF | GACGTACCAGATTACGCTCATATGCCCGAAGACGCTCCCTA |
| VAM4\_ADR | GACGTACCAGATTACGCTCATTTAGTTGCCCTTGAAGTGGAA |
| CHS7\_QPCR\_F | CGCTGGTTGACGCACTTGTTC |
| CHS7\_QPCR\_R | CGGTGGTACGAATGGTGTTCTG |
| CON7\_QPCR\_F | TCGGTCAGGCTCCCCACAG |
| CON7\_QPCR\_R | GCAGCAGACGAGGTATCTACGG |
| CPKA\_QPCR\_F | AACTCCAGCGGCGTGATGC |
| CPKA\_QPCR\_R | ATGAGGATGCGGCGGAAAGTC |
| MAC1\_QPCR\_F | TGGTGAACAAGGCGTCTCGTATC |
| MAC1\_QPCR\_R | TTGGCTGCTGAGTGACCGTAG |
| MSB2\_QPCR\_F | TGCTACACCCTCCGAGATGC |
| MSB2\_QPCR\_R | CAGTTCCAGCCGAGTGAGTTC |
| MST12\_QPCR\_F | GGTGGCTTATGAGTCTTGGAATCG |
| MST12\_QPCR\_R | CTTGATCTGAAGTCTGCGTGTGG |
| PMK1\_QPCR\_F | TTGATGTATGGTCGGTTGGATGC |
| PMK1\_QPCR\_R | GGGAAGAGTGTTGGGAAAGGC |
| SFL1\_QPCR\_F | ACATCATTGGCTTGCGAGAG |
| SFL1\_QPCR\_R | ATGGCGGCTTGTTGCTTG |
| SHO1\_QPCR\_F | GCCTGCGGTCTGGTCCTG |
| SHO1\_QPCR\_R | CGGTTGTTGCTCGTTGACTCC |
| VAM4\_QPCR\_F | GCGCTCCAGAGCCAAAT |
| VAM4\_QPCR\_R | CTTGCGGACCCTGTTGG |
| ACTIN1\_QPCR\_F | AGCGTGGTATCCTCACTTTGC |
| ACTIN1\_QPCR\_R | CATCTTCTCTCGGTTGGACTTGG |
| IML1\_QPCR\_F | ACGAGCCCAACTCCATCAGAC |
| IML1\_QPCR\_R | GCGACCGAAGAAGACAGCAG |
| OSBP1\_QPCR\_F | GAAGGCGTCGTCAGCGTATC |
| OSBP1\_QPCR\_R | CGTGTCGGCGTTCTTAGGC |
| OSBP2\_QPCR\_F | CCATAACCACCACAATACAACGC |
| OSBP2\_QPCR\_R | CGGCAAAGGCAGTGACATAAAG |
| OSBP3\_QPCR\_F | GCGAGCGGGAGCGAACAG |
| OSBP3\_QPCR\_R | GCGGGCTTGGGCACATCC |
| OSBP4\_QPCR\_F | CTGGGCGAGGTGTTTTGC |
| OSBP4\_QPCR\_R | AGGTAGTCCTCCTTGTAGCG |
| OSBP5\_QPCR\_F | CCGTCTGTTCCGTCGTGTAAG |
| OSBP5\_QPCR\_R | CGCTGACTCCTGTGTTCTCG |
| OSBP6\_QPCR\_F | TGACCGCTCCGCCCTTTATTC |
| OSBP6\_QPCR\_R | GCTTCTTCTCGTTGCCATACTGC |
| SED5\_QPCR\_F | CCCAGGAGGTCCGAGTTTGC |
| SED5\_QPCR\_R | GATTGAGCGATGACAGGTCTTGC |
| SMA1\_QPCR\_F | ACCTCCCGCCACCTCTAATCC |
| SMA1\_QPCR\_R | GCCACCGCCACTGCTTCC |
| VAM725\_QPCR\_F | CGCACAACAGCACAATCCTCAC |
| VAM725\_QPCR\_R | GAGTCGGCAATGACCAAGAAGG |
| VTI1\_QPCR\_F | CAGCAGCAGGCGGTTGA |
| VTI1\_QPCR\_R | TCCCCTAAGGGTCTTGACG |