

Aloin remodels the cell wall of *Candida albicans* to reduce its hyphal virulence against oral candidiasis

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Supplementary materials

Table S1. The RT-qPCR primers used in this study

Primer name	Sequence (5'–3')
<i>ACT1</i> -F	TGGAAGCTGCTGGTATTGAC
<i>ACT1</i> -R	TCCTTTTGCATACGTTTCAGC
<i>GSCI</i> -F	CCTGAGCTGGTGACATACGG
<i>GSCI</i> -R	CAGCTTGGTCTGCTGATCCT
<i>GSL1</i> -F	TATTGGGGGAGGTAGCGTCA
<i>GSL1</i> -R	ACGAAGAAAAGAACCGCCGA
<i>GSL2</i> -F	CTTCGCTGTGCTTCTGCTTG
<i>GSL2</i> -R	CCCGGAGTTGAAGGGGATTC
<i>RHO1</i> -F	GGTACTTTCCCAGAAGTTTATG
<i>RHO1</i> -R	TCTTGACCAGCAGTATCCCA
<i>CBK1</i> -F	TAATGGCCCCCAATGACCAC
<i>CBK1</i> -R	AAACTCGGTGATGGTGGACG
<i>BCR1</i> -F	ATGTCGGCGTTAGTGTTGGT
<i>BCR1</i> -R	TATGCCGTGCCTCCTTTACG
<i>ECE1</i> -F	ACAGTAGGTGCTTGGTCAGC
<i>ECE1</i> -R	CCATCATCCACCATGCTCCA
<i>CHT2</i> -F	GAACCAGTTGGGAGAACGGT
<i>CHT2</i> -R	TTCTGCTGCTGTTGCCACTA
<i>RBT5</i> -F	TGGTGCCGTTGGTAACTGTG
<i>RBT5</i> -R	AGATTCGGCAGTGGTGGATT
<i>PGA7</i> -F	TCCTCGATGCTTTCCACTGC
<i>PGA7</i> -R	GAGCCTGTAGATGACGAGCC
<i>PGA10</i> -F	GGAGGTAGTGGCAAGCTCAG
<i>PGA10</i> -R	GGTGTCGGGAACCATACTG
<i>HYR1</i> -F	ATAATGGCTCCGGTTCAGGC
<i>HYR1</i> -R	TGATCCGTTACCAGCACCTG
<i>ALS3</i> -F	TGGGGTTCCTGGTCCCTTAT
<i>ALS3</i> -R	TATTTGTCGGTTGCGACTGC
<i>HWP1</i> -F	GCTGGCTCAAGTGGTGCTAT
<i>HWP1</i> -R	TGGCAGATGGTTGCATGAGT

Table S2. Functions of cell wall-related genes regulated by *CBK1-BCR1* and β -1,3-glucan synthesis related genes

Gene	Description
Cell wall-related genes regulated by	
<i>CBK1-BCR1</i>	
<i>CBK1</i>	Ser/Thr kinase of cell wall integrity pathway
<i>BCR1</i>	Transcription factor; regulates α /alpha biofilm formation, matrix, cell-surface-associated genes
<i>CHT2</i>	GPI-linked chitinase
<i>RBT5</i>	GPI-linked cell wall protein
<i>PGA7</i>	GPI-linked hyphal surface antigen
<i>PGA10</i>	GPI anchored membrane protein
<i>HYR1</i>	GPI-anchored hyphal cell wall protein
<i>ALS3</i>	Cell wall adhesin
<i>HWP1</i>	Hyphal cell wall protein
Genes associated with β-1, 3-glucan synthesis	
<i>GSC1</i>	Essential β -1,3-glucan synthase subunit
<i>GSL1</i>	β -1,3-Glucan synthase subunit
<i>GSL2</i>	Protein similar to β -1,3-glucan synthase
<i>RHO1</i>	Small GTPase of Rho family; regulates β -1,3-glucan synthesis activity and binds Gsc1p

Table S3. Interaction of aloin with antifungal agents

Agent	MIC _{alone} (μg/mL)	MIC _{antifungal agent} ⁺ MIC _{aloin} (μg/mL)	FICI
Aloin	>100	-	-
Itraconazole	0.03	0.06+100	>2
5-FC	0.25	0.25+100	>1
Micafungin	0.03	0.13+100	>4

FICI ≤ 0.5 indicates synergy, 0.5 < FICI ≤ 4 indicates no significant difference, and FICI > 4 indicates antagonism.

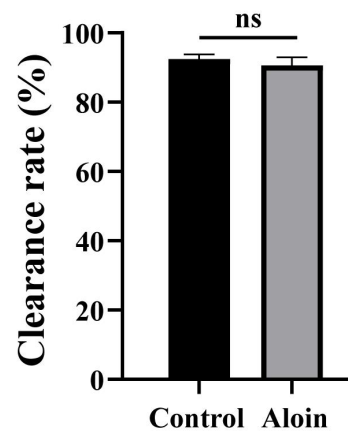


Fig. S1. Susceptibility of *C. albicans* to macrophagocyte. Comparison of the clearance rates of macrophages treated with aloin (100 µg/mL) or DMSO (control) against *C. albicans*. ns, no significance.