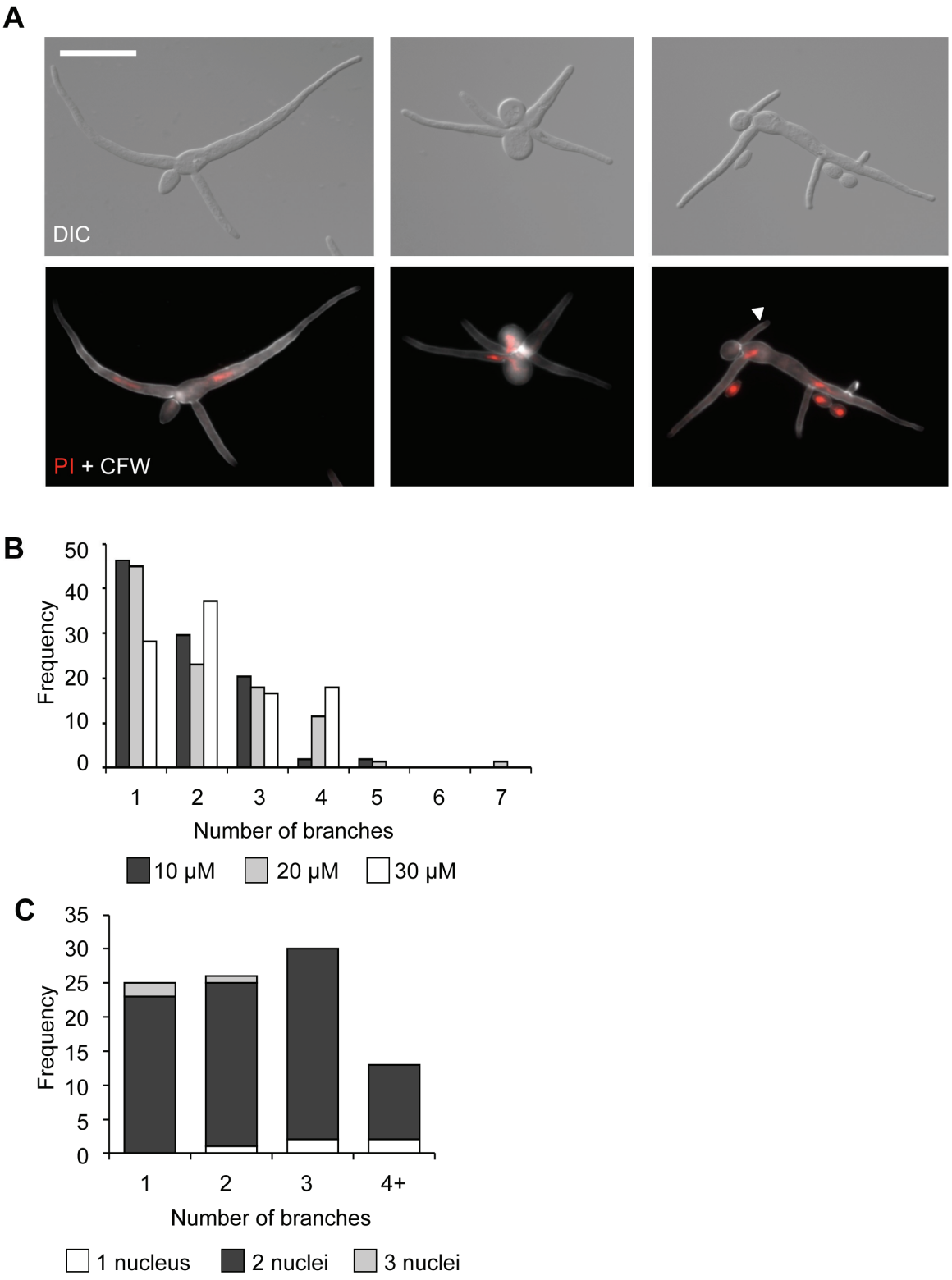
A
DIC
PI + CFW
B
Frequency
50
40
30
20
10
0
1
2
3
4
5
6
7
Number of branches
10 µM
20 µM
30 µM
C
Frequency
35
30
25
20
15
10
5
0
1
2
3
4+
Number of branches
1 nucleus
2 nuclei
3 nuclei

Figure S1: Geldanamycin (GdA)-induced filaments have a tendency to form multiple branches in a manner uncoupled from cell cycle progression. (A) Examples of branched filaments stained with propidium iodide (PI, red) and calcofluor white (CFW, white) showing branches off the base of the mother cell (left and centre panels), off the mother cell itself (right panel, white arrowhead), and at different points off the filament (right panel). Round cells in right-most panel are yeast form cells unrelated to the depicted filament. (B) Frequency histogram of number of branches on cells treated with 10, 20 and 30 μM GdA. Branching frequency shows a modest correlation with increasing drug concentration. (C) Frequency of number of nuclei observed in filaments with 1, 2, 3 and 4 or more branches. The majority of filaments have 2 nuclei, regardless of branch number. Scale bar = 20 μm.

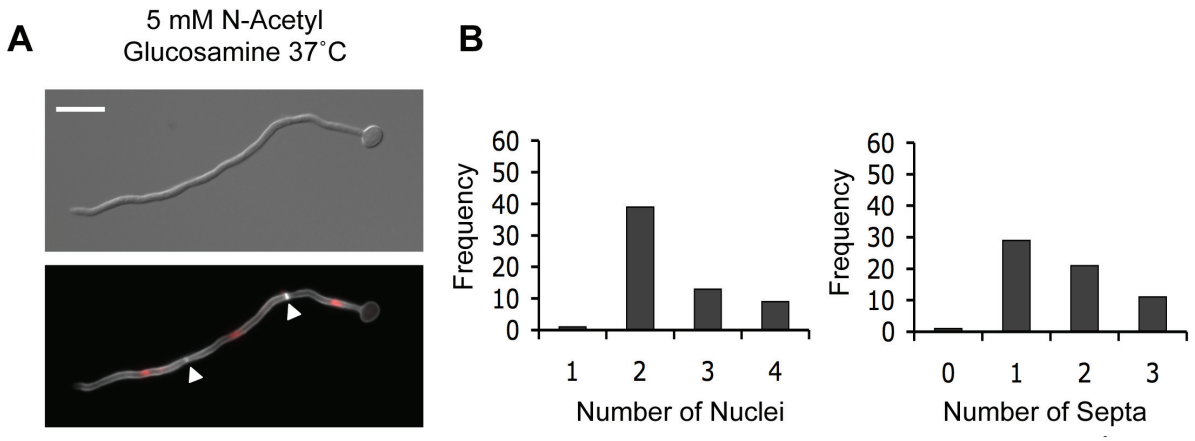

Figure S2: *C. albicans* hyphae contain variable numbers of septa and nuclei. Hyphae induced by growth in the presence of N-Acetyl Glucosamine at 37˚C were subject to the same analysis described in Figure 2A and 2B. (A) Calcofluor white (CFW) and propidium iodide (PI) staining showing bright bands of CFW staining at septa (white arrowheads) and one nucleus per cell compartment. (B) Frequency histograms of number of nuclei and septa in representative hyphae. Scale bar = 10 μm.

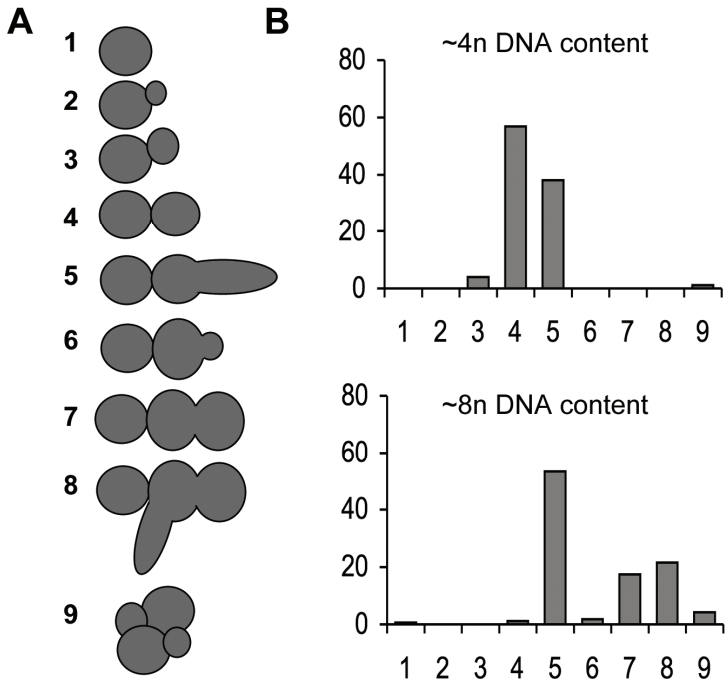

Figure S3: Two-lobed cells are recovered in sorted populations with >4n DNA content. (A) Categories of morphology. (B) Frequency histograms of morphologies recovered in FACS sorted populations of larger-than-average cells containing ~4n or ~8n DNA content by propidium iodide fluorescence.

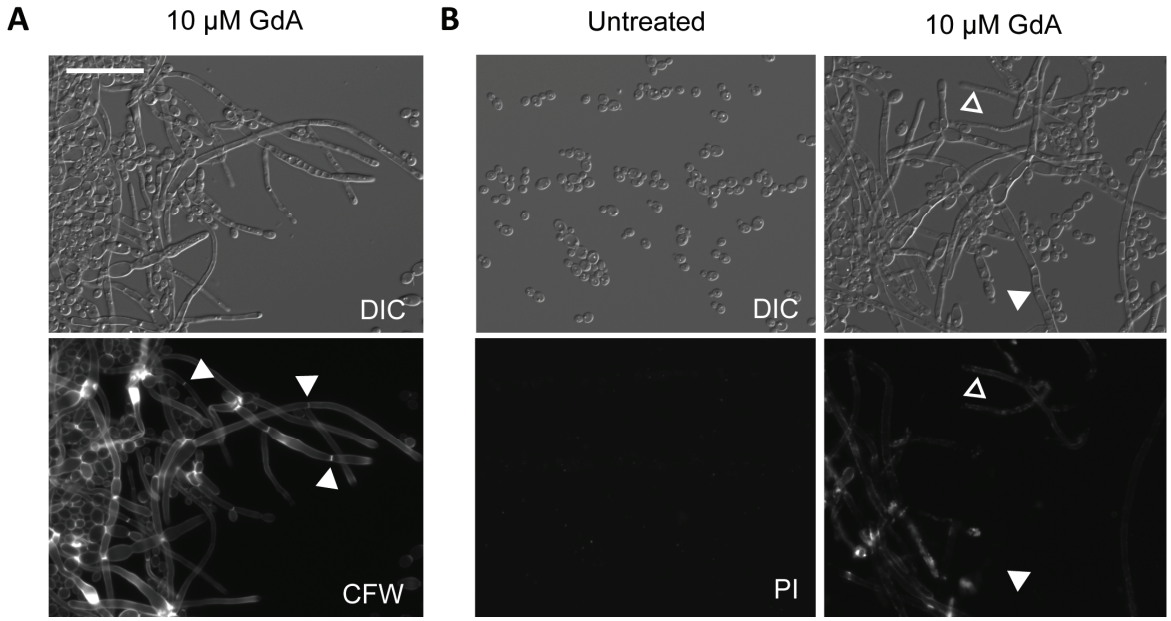

Figure S4: After 24 hours of geldanamycin (GdA) treatment, many cells resume cell division and remain viable. (A) Cells were treated with GdA for 24 hours and stained with calcofluor white (CFW). Septa (white arrowheads) were visible indicating cell division had occurred in some filaments. (B) Cells were treated with GdA for 24 hours and assayed for viability with propidium iodide (PI). Some filaments took up the dye (open arrowhead), but many did not (white arrowhead) indicating that these filaments remain viable after 24 hours of treatment. Scale bar = 40 µm.

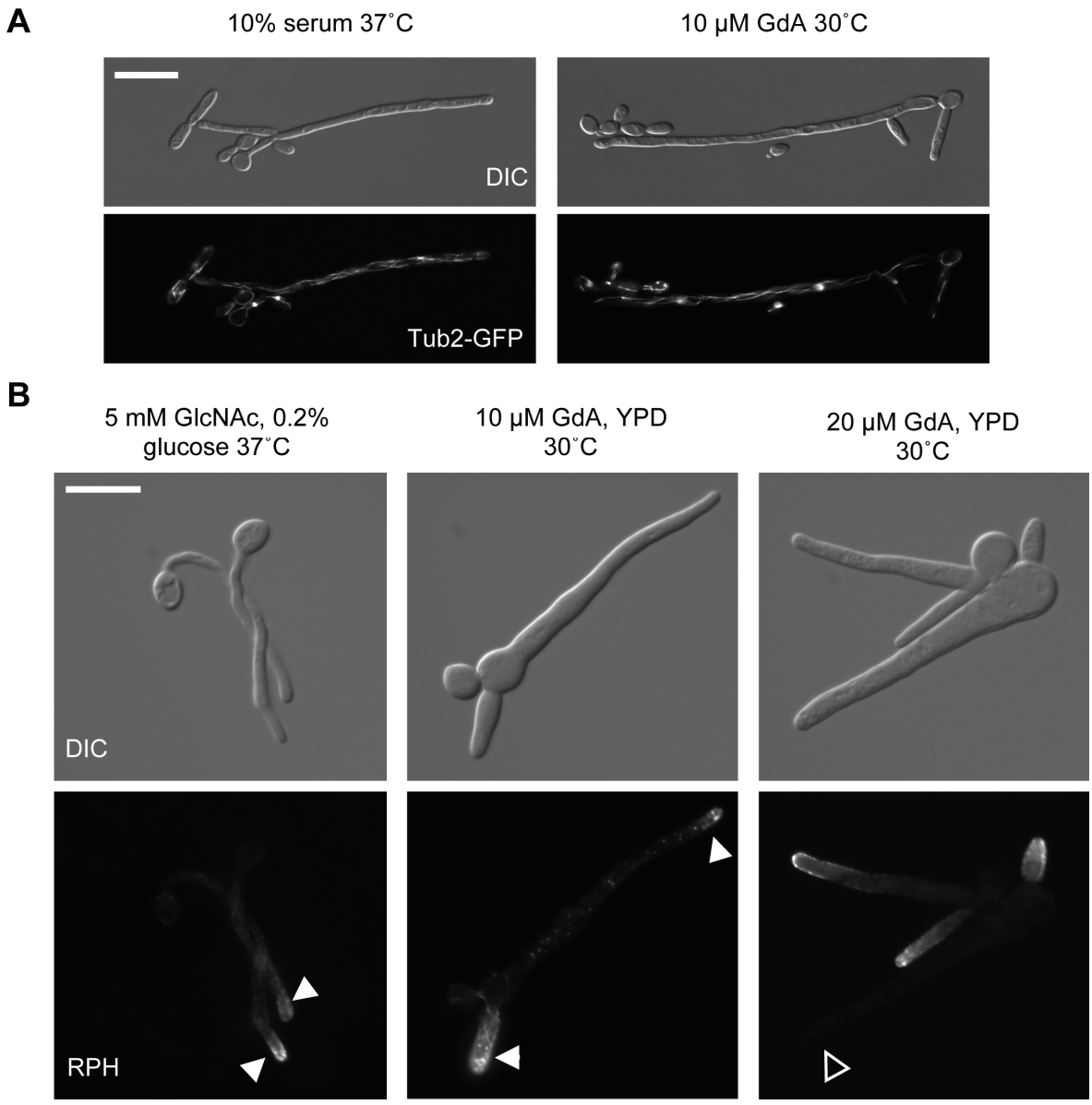

Figure S5: Tubulin and actin cytoskeletons are similar in hyphae and filaments induced by geldanamycin (GdA). (A) A GFP tagged subunit of tubulin (Tub2-GFP) reveals similar helical microtubule networks in both GdA-induced filaments and hyphae (10% serum 37˚C). (B) Actin was stained by rhodamine phalloidin (RPH) in cells treated as indicated. In both hyphae and GdA-induced filaments, actin was polarized to filament tips (solid white arrowheads). In GdA-incuded filaments with many branches, not all branches had extensive actin polarization (right-most panel, open arrowhead). Scale bars = 10 µm.