

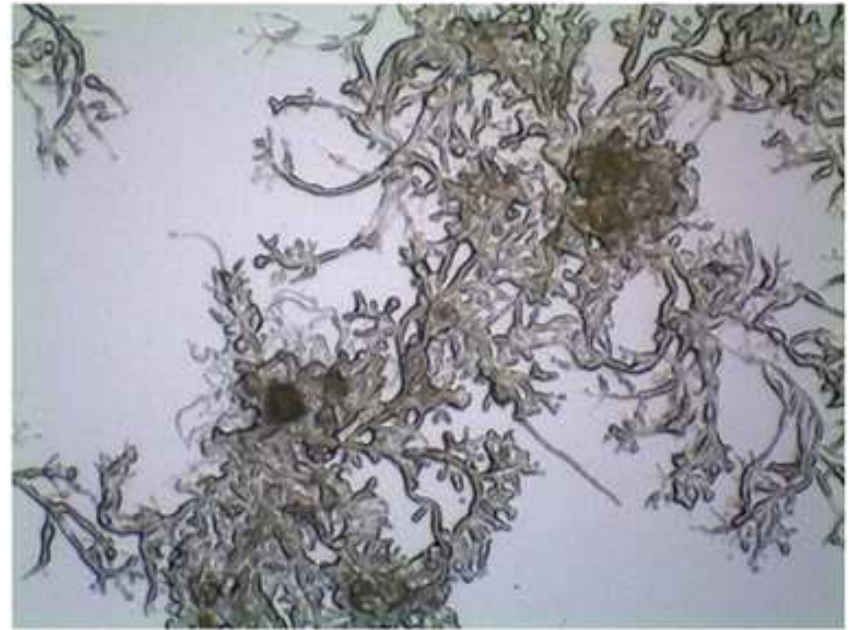
A



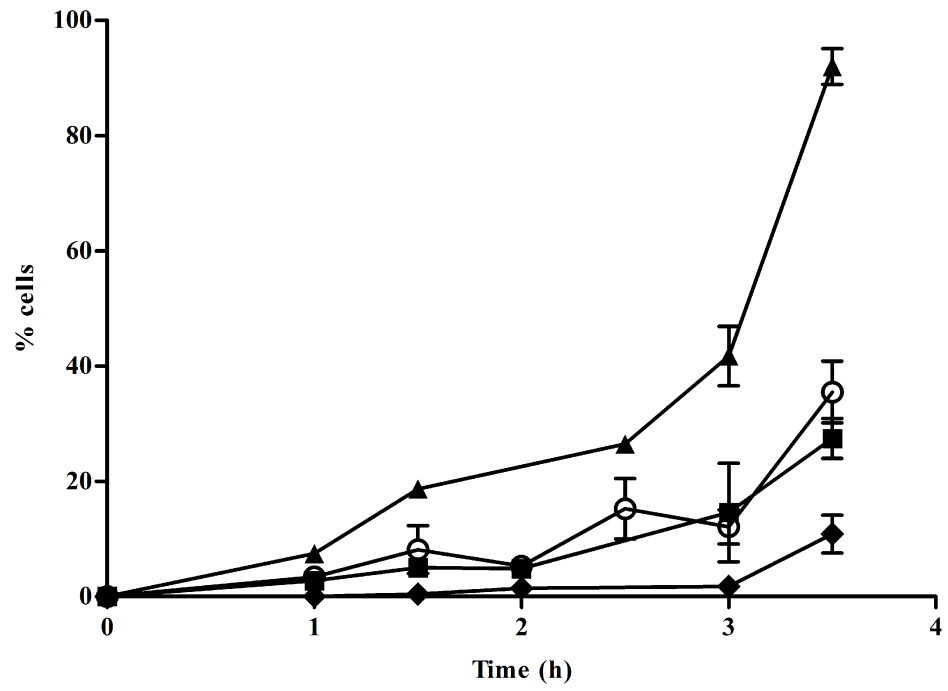
500 μ m

B

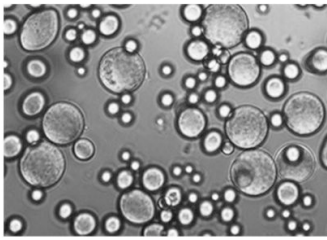
Suppl. Fig. 1



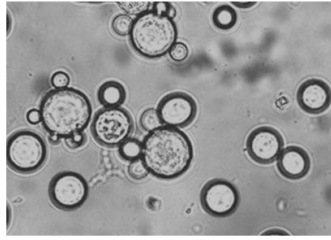
Suppl. Fig.2



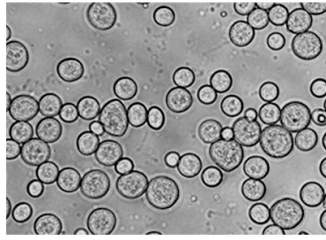
A



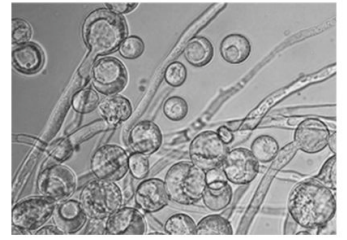
B



C



D



30 μ m

Supp. Fig.3

	PKAR1	PKAR2	PKAR3	PKAR4
Viability	None	None	None	Essential
PKAC total activity	Decreased in Δ PKAR1	Similar in Δ PKAR2	N. D. ¹	N. D.
Effect on ratio of PKAC activity -/+ cAMP	Lower in Δ PKAR1	Similar in Δ PKAR2	N. D.	N. D.
Expression	High in aerobiosis and anaerobiosis	High in aerobiosis and anaerobiosis	High in spores	High after germ tube emission and in anaerobiosis-aerobiosis shift
Radial growth	Major positive function	None	Minor positive function	Major positive function
Sporulation	Major positive function	None	Minor positive function	Major positive function
Hypha morphology (solid medium)	None	None	None	Essential
Germination	Delays	Delays	None	Essential
Cell mother Volume	Increases	Increases	None	Decreases
Hyphal length	Increases	Decreases	None	N. D.
Growth in anaerobiosis and Glycine (Nitrogen source)	None	Unipolar growth	None	N. D.
Polyubiquitilation	Yes	Yes	No	No

Summary Table

Summary of the conclusions on the distinct roles of the four PKAR isoforms including PKR1 which was previously characterized by our group (*)

(*) **Ocampo J, Fernandez Nuñez L, Silva F, Pereyra E, Moreno S, Garre V, Rossi S.**

2009. A subunit of protein kinase A regulates growth and differentiation in the fungus

Mucor circinelloides. Eukaryot. Cell **8**: 933-944.

Suppl. Fig. 1. Hyphal cell polarity

Image of hyphae from growing edges of the colonies of (A) R7B strain and (B) $\Delta R4$ heterokaryotic strain grown in solid medium MMC pH 4.5 for three days at 30°C.

Suppl. Fig. 2. Germination kinetics of the *pkaR* mutant strains

The germination kinetics of R7B wild type strain (o), and the mutant strains, $\Delta R2$ (\blacktriangle), $\Delta R3$ (\blacksquare) and $\Delta R4$ (\blacklozenge) was determined by microscopic observation of the germinated cells at different time points during four hours of aerobic growth in YPG medium pH 4.5. Data are the mean +/- SEM for three independent experiments.

Suppl. Fig. 3. Anaerobic growth and nitrogen source

The wild type strain R7B and mutant strain $\Delta R2$ grown under anaerobic condition at 30°C over night. (A) R7B (B) $\Delta R2$ in the presence of glucose as carbon source and casaminoacids as nitrogen source. (C) R7B and (D) $\Delta R2$ grown in the presence of glucose as carbon source and glycine as nitrogen source.