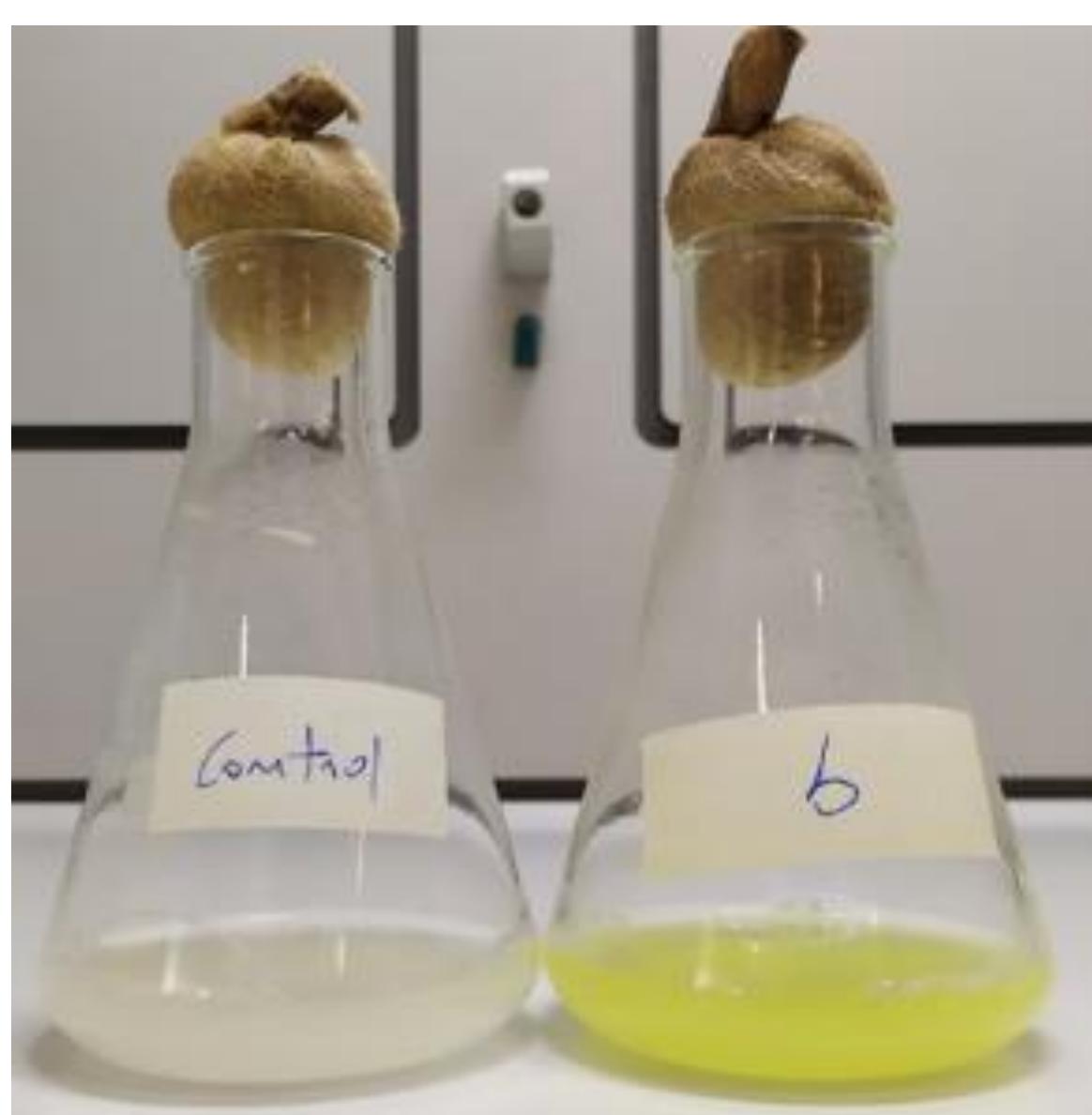


Heterologous pathway combinations tested:

A - 4CL1 from *Arabidopsis thaliana* and CUS (curcuminoid synthase) from *Oryza sativa* (capable of one-pot synthesis of curcumin from feruloyl-CoA)

B - 4CL1 from *A. thaliana*, DCS and CURS from *C. longa*

C - FerA (feruloyl-CoA synthetase) from *Pseudomonas paucimobilis*, DCS and CURS from *C. longa*



Left flask: No ferulic acid was added to the culture media; Right flask: 16 mg/L of ferulic acid were added to the media at 24 h of fermentation

Name	Curcumin colony titer (µg/L)					Media (σ)
	1	2	3	4	5	
A (↑4CL↑CUS)	78.2	88.8	73.9	87.3	23.0	70.2 (22.1)
B (↑4CL↑DCS↑CURS)	609.1	1067.0	704.3	356.1	173.6	582.5 (279.5)
C (↑FerA↑DCS↑CURS)	1127.3	1413.3	1014.0	1321.3	1248.8	1224.9 (128.7)

- Engineered *S. cerevisiae* expressing type III PKS (DCS and CURS) from *C. longa* produced more curcumin than expressing CUS from *O. sativa*;
- FerA from *P. paucimobilis* resulted in more curcumin than 4CL from *A. thaliana*;
- Our work represents the first report on the production of curcumin in yeast, representing a good basis for the development of a *S. cerevisiae* cell factory to produce high purity preparations of curcumin