

## Why does uridine supplementation properly rescues the growth of *Ashbya gossypii* uracil auxotrophs, but not uracil?

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The use of auxotrophies as a tool for genetic modification of microbial strains is widely employed in microbiology laboratories. However, there are some recognized problems associated with their use, such as the fact that it is unclear how much supplementation is required for each auxotrophy and microorganism. Among the auxotrophies, one of the most used is that for uracil. In this case, the strains require the supply of exogenous uracil to compensate their nutritional deficiency. However, in some studies exogenous uridine is used instead of uracil. The flavinogenic *A. gossypii* Agura3 strain is unable to grow at the same level of the parent strain when the medium is supplemented with uracil alone, being necessary the addition of uridine to overcome this effect<sup>1</sup>. A similar effect was also reported for other flavinogenic fungi, such as *Pichia guilliermondii* (*Candida guilliermondii*)<sup>3</sup>. Given the importance of these uracil auxotrophic strains, it is of extreme pertinence to elucidate the determinants behind this inadequacy of uracil to rescue the growth of flavinogenic uracil auxotrophs. Therefore, in this work we investigated the capability of the intermediates of the salvage pathways of pyrimidine ribonucleotides to rescue the growth of *A. gossypii* Agura3 and verified that uridine is the most adequate for growth supplementation. Based on these results, a hypothesis identifying the potential limiting step of this pathway in *A. gossypii* is proposed.

### References:

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