

Fermentation at high-pressure of CO₂ and H₂ for acetone production by modified *Acetobacterium woodii*.

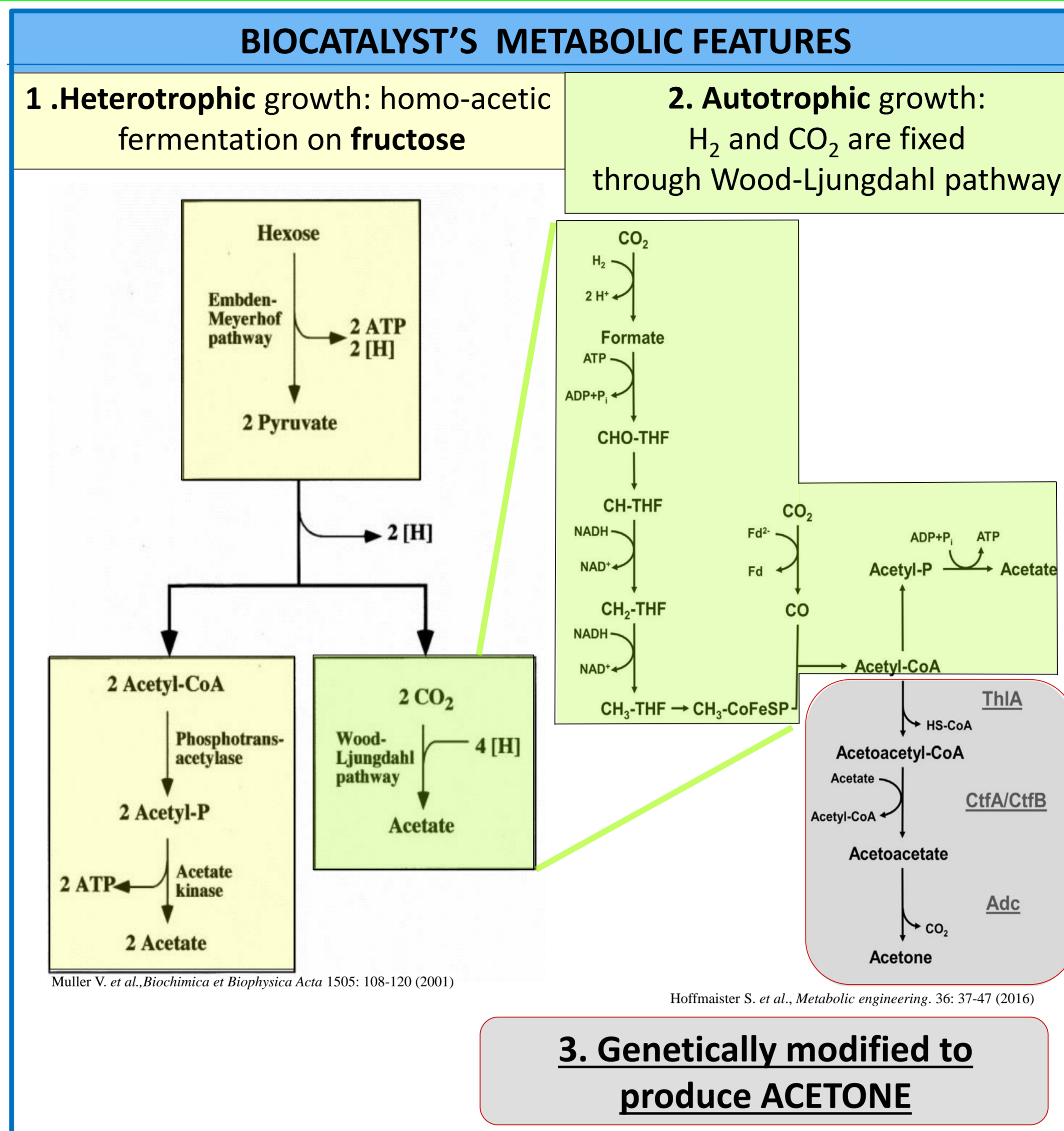
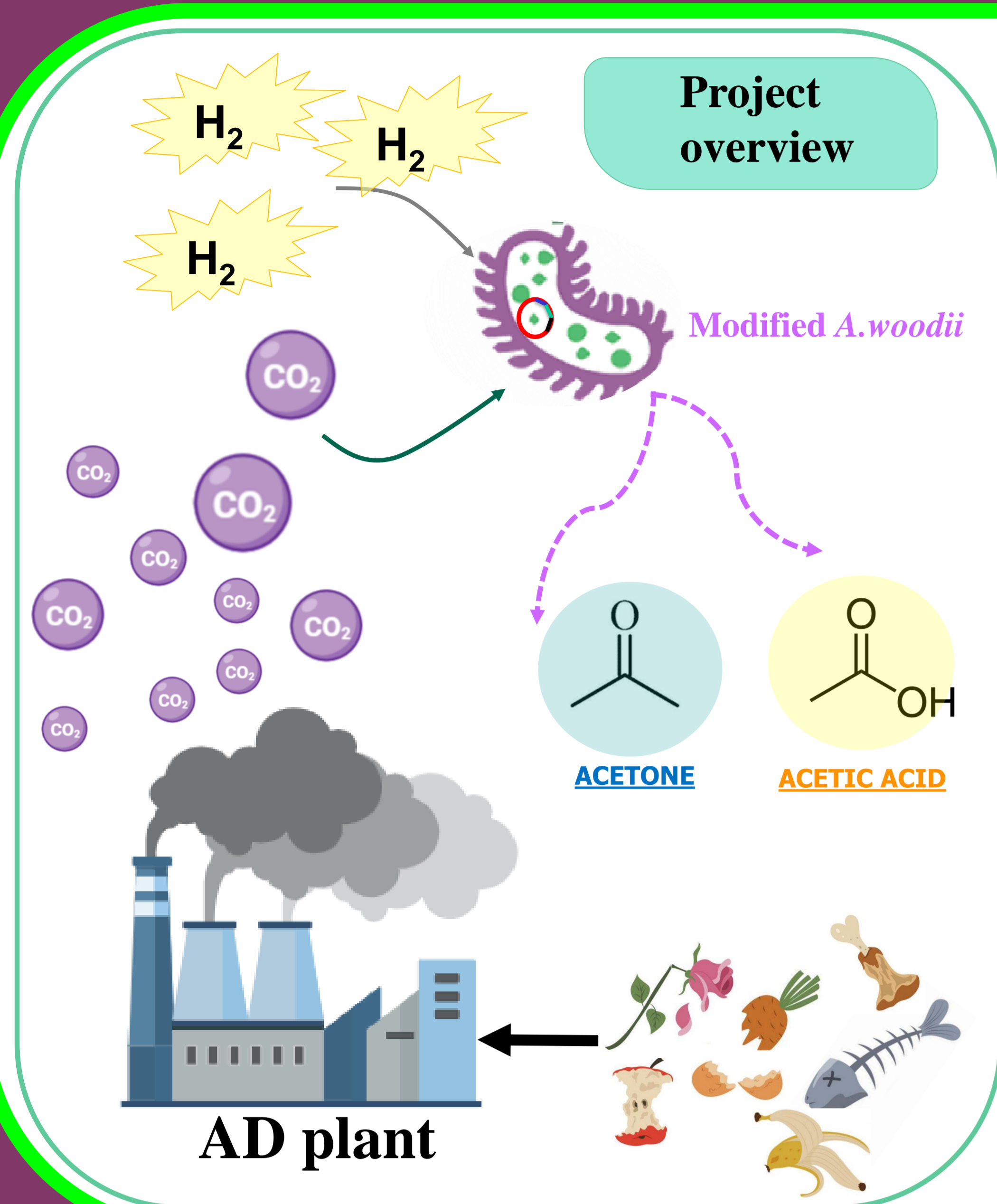
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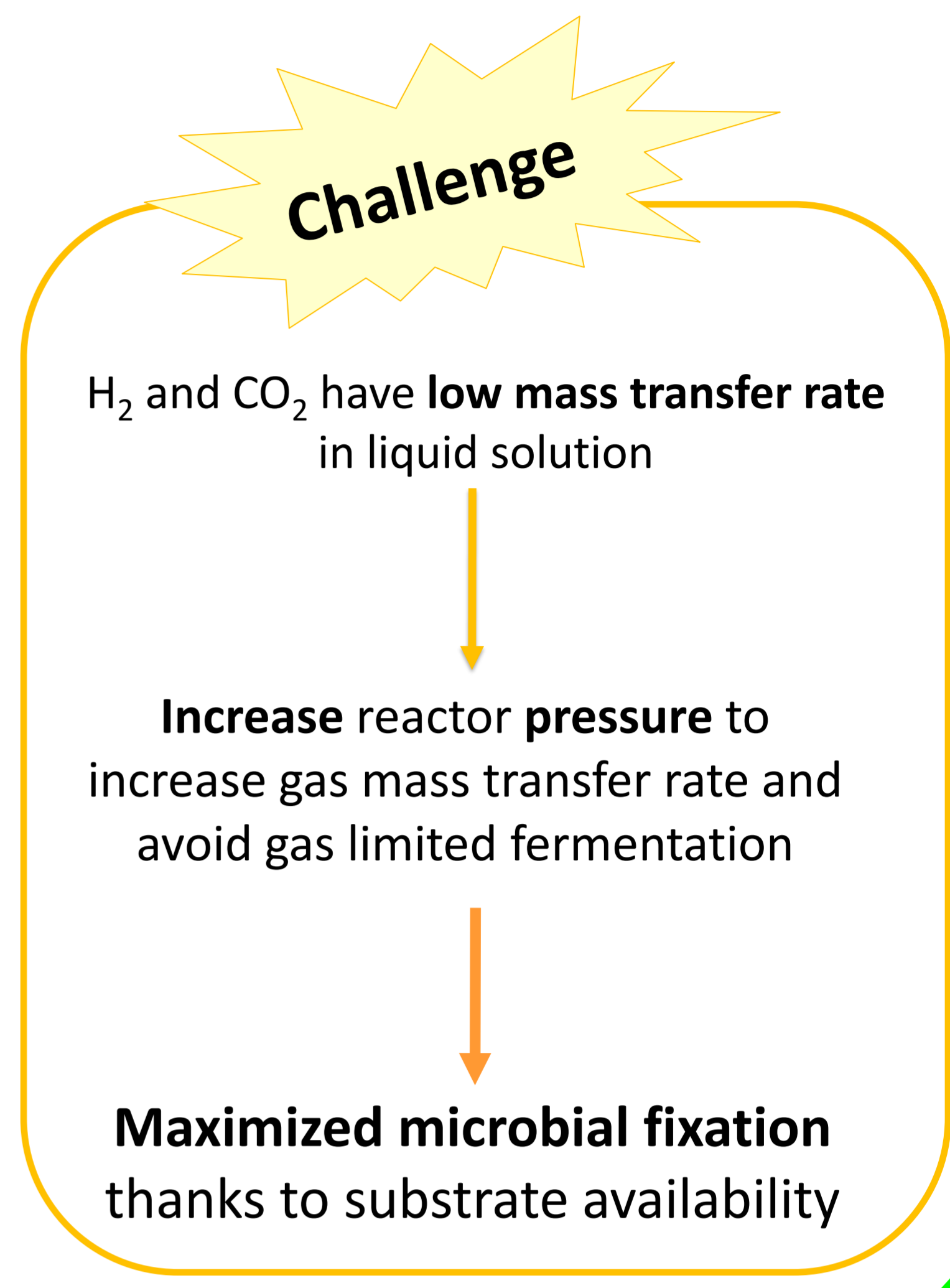
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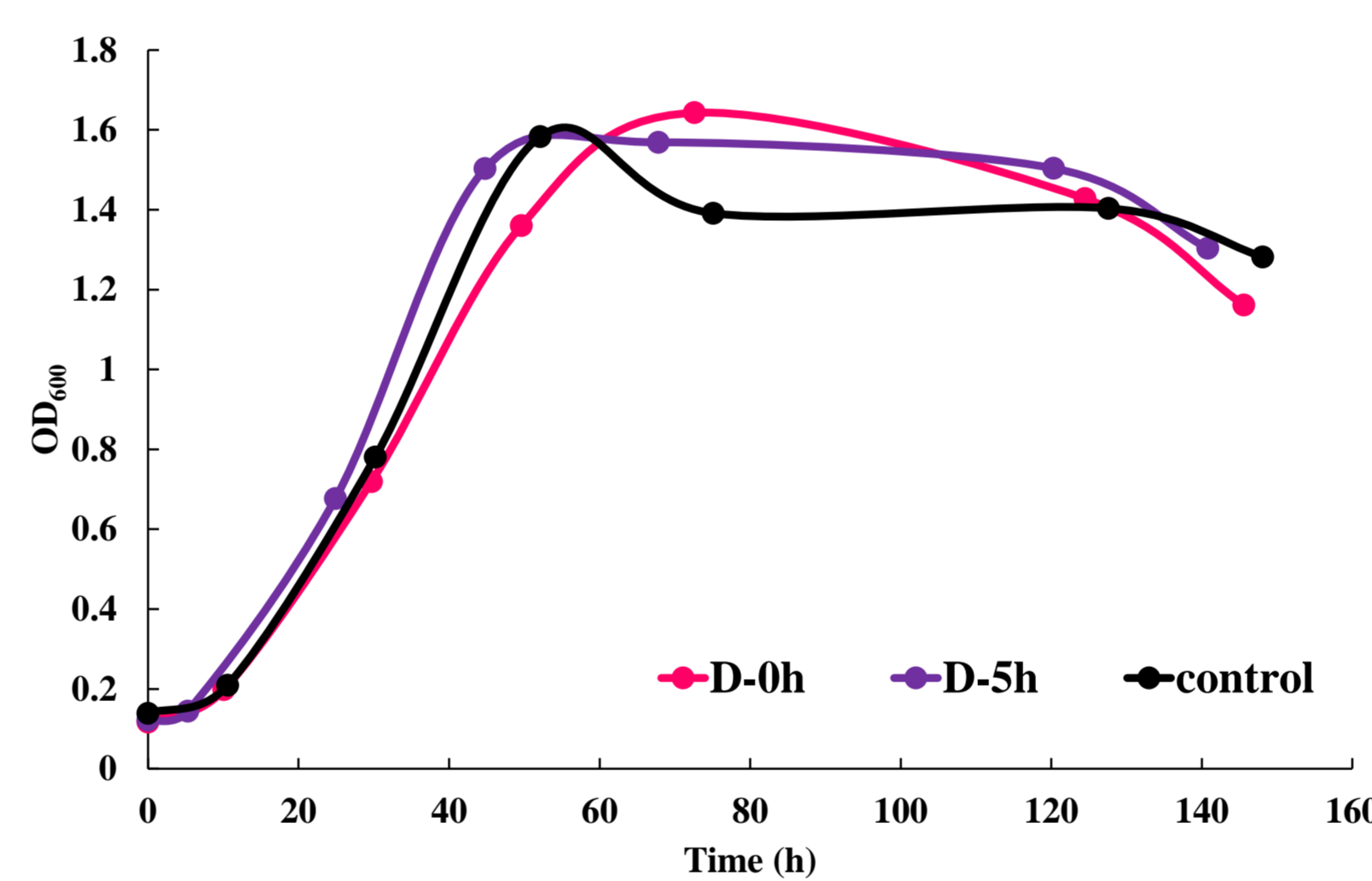
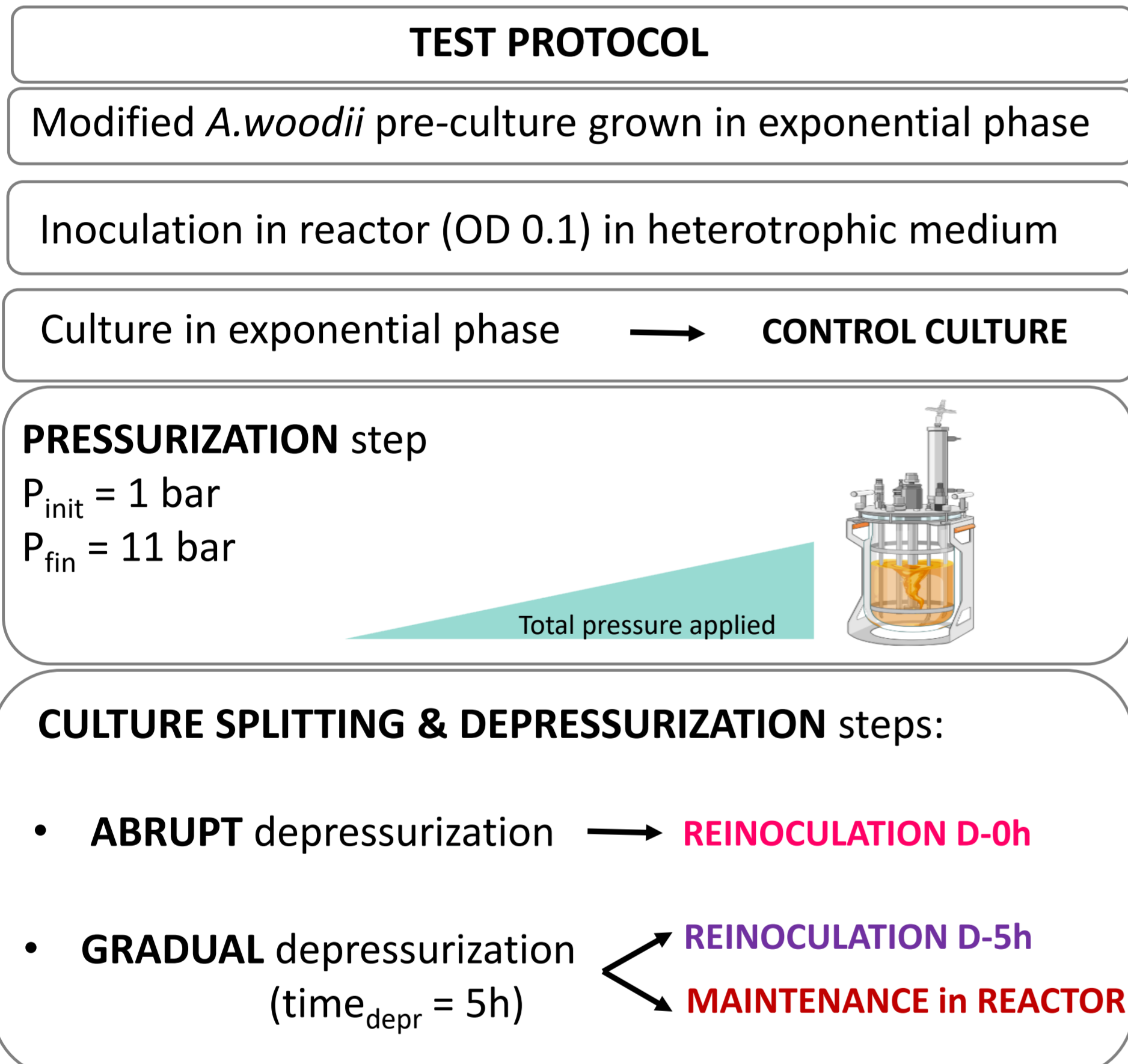
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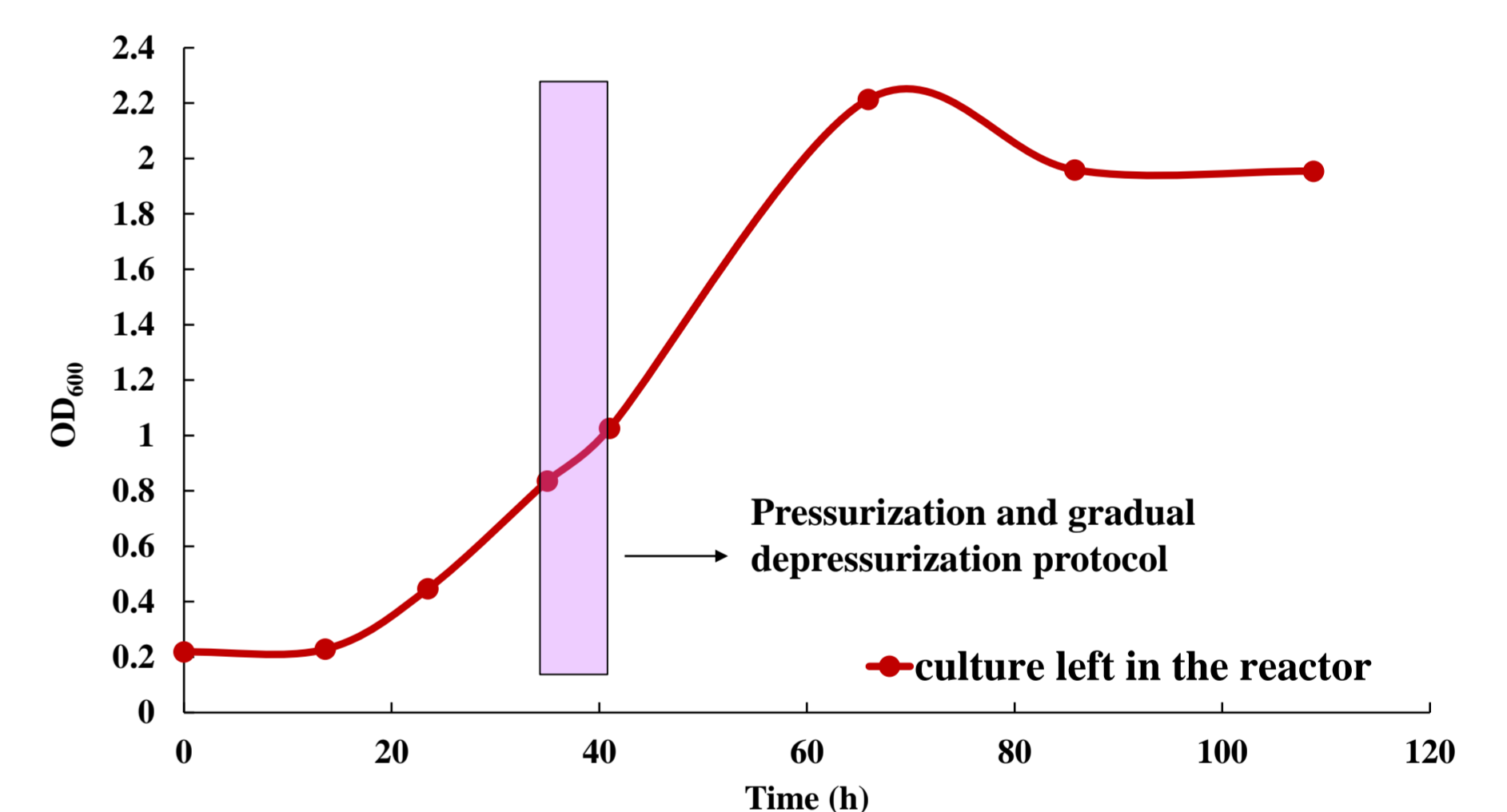
Synthesis of acetone from CO₂ and renewable H₂ with modified *Acetobacterium woodii*



A. woodii resistance to pressurization



Growth curves of modified *A. woodii* re-inoculated in fresh medium after different pressurization - depressurization protocols.



Growth curve in reactor of modified *A. woodii* stressed by pressurization and depressurization steps.

High pressure autotrophic fermentation

BIOMASS vs In-FLOW RATE: COMBINATIONS TESTED

COMBINATIONS	IN-FLOW RATE	BIOMASS
HIGH Biomass & HIGH In-Flow rate	87 ml/min	OD _{600nm} = 1.6
LOW Biomass & LOW In-Flow rate	10 ml/min	OD _{600nm} = 0.6
HIGH Biomass & LOW In-Flow rate	10 ml/min	OD _{600nm} = 1.2

BIOMASS vs In-FLOW RATE: METABOLIC PRODUCTS

COMBINATIONS	ACETATE	ACETONE	FORMATE	BIOMASS GROWTH
HIGH Biomass & HIGH In-Flow rate	✓	✓	✓	✗
LOW Biomass & LOW In-Flow rate	✓	✓	✓	✗
HIGH Biomass & LOW In-Flow rate	✓	✓	✓	✗

