Tailored Bioplastics for Biomedical Applications: Controlling 4HB Incorporation in PHA Copolymers

TÉCNICO LISBOA

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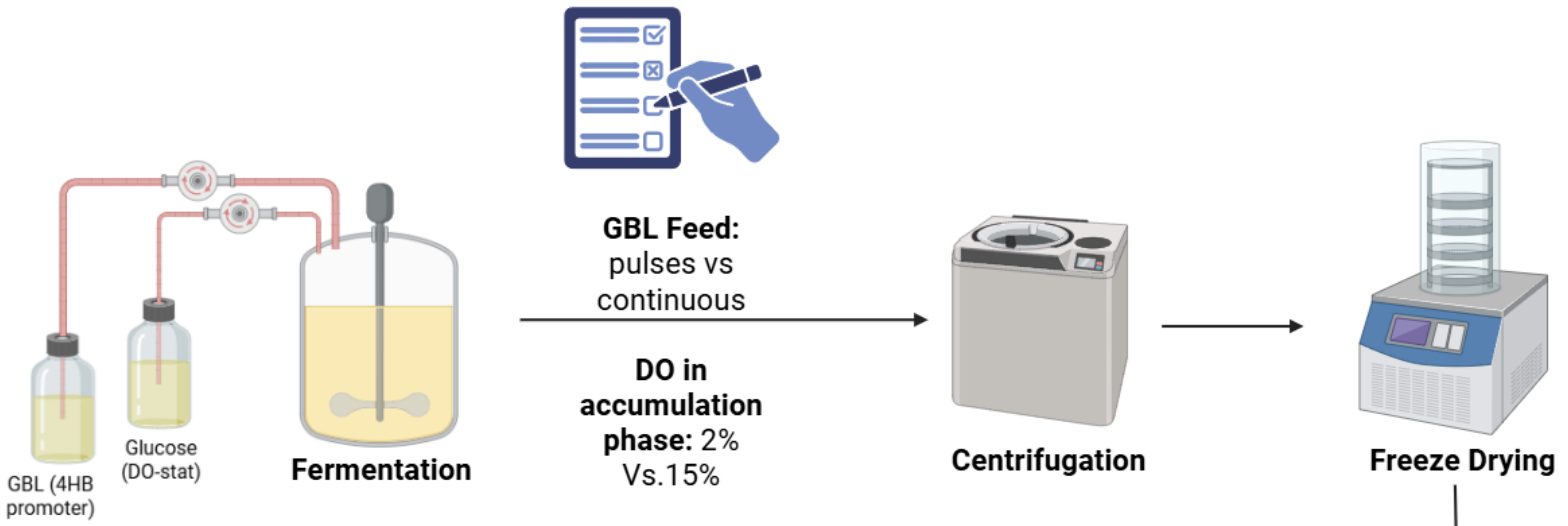
iBB Institute for Bioengineering and Biosciences

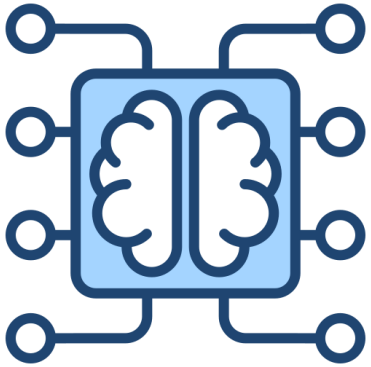
Fermentation and extraction process



Microorganism

Cupriavidus necator

Forecasting 4HB incorporation



Bioplastic of interest

P(3HB-co-4HB) exhibits greater flexibility, toughness, and biocompatibility than PHB, broadening its potential for biomedical applications

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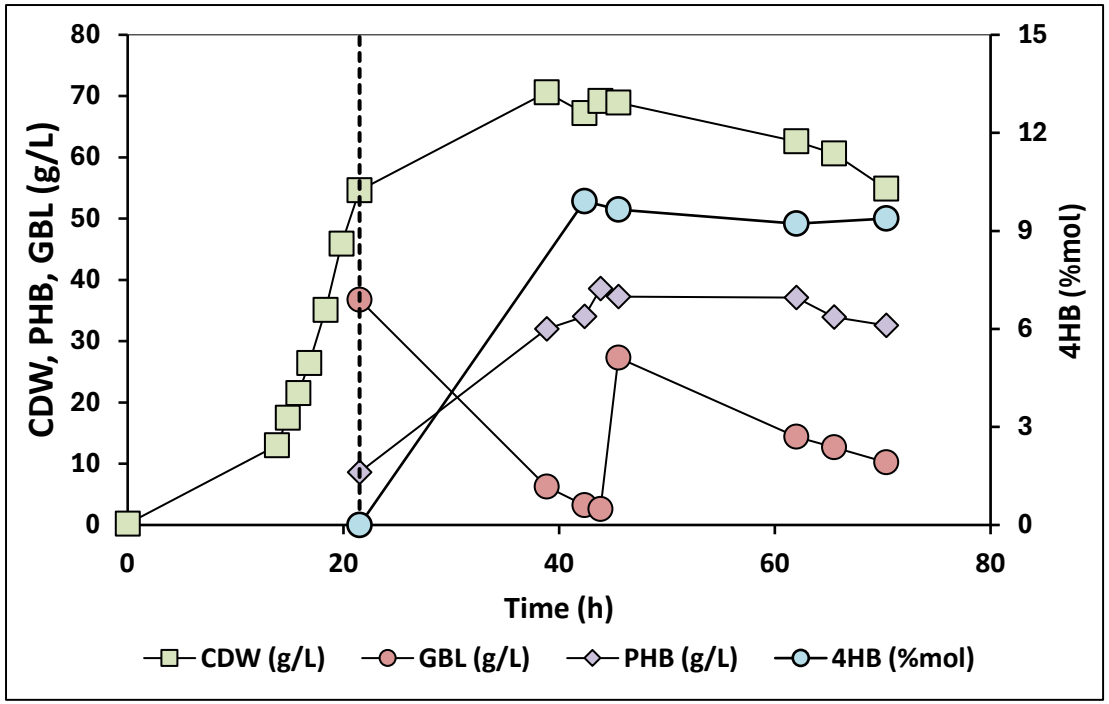
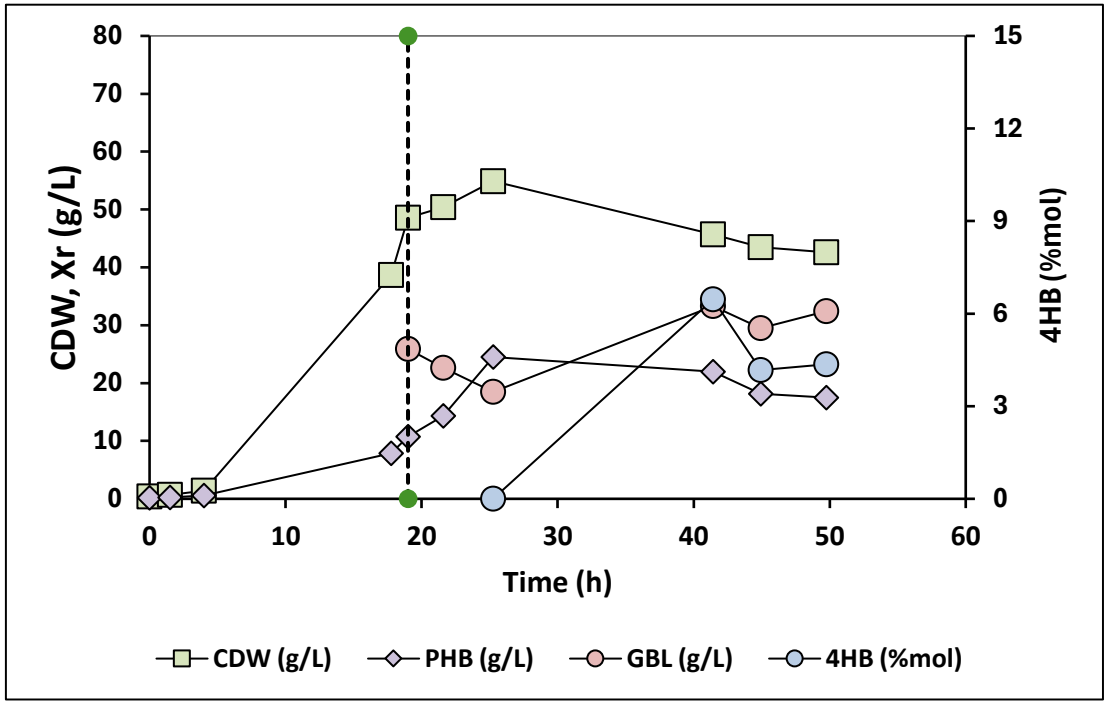
1: GBL pulses; 15% DO



2: GBL constant; 15% DO



	Maximum			Final		
	CDW (g/L)	PHB (g/L)	4HB (%mol)	CDW (g/L)	PHB (g/L)	4HB (%mol)
Reator 1	70.60	38.56	**9.91**	54.89	32.58	**9.38**
Reator 2	54.90	24.50	**6.41**	42.60	17.50	**4.36**

Acknowledgments

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Circular Bio-based Europe Joint Undertaking

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