

EuroBioRef

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SP4 – INTEGRATED BIOCHEMICAL CONVERSION AND SEPARATION PROCESSES

WP4.1 – Development of a biomass utilizing microbial strain to produce 3-HPA

Deliverable report

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Approval

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Executive summary

Description of the deliverable objective and content

Based on laboratory scale testing of separation technologies including evaluation of impurity profiles obtained when biomass hydrolysate based fermentations are separated, the most suitable technology should be selected and used for pilot scale fermentation and separation to provide 3-HPA for further activities in other WPs. This deliverable deals with successful upscaling to pilot of the separation process and the production of 3-HPA in pilot scale.

Brief description of the state of the art

Biomass hydrolysate based fermentation of 3-HPA has been demonstrated in 2 and 10 L scale, albeit the carbon yield has been too low to make the process economically viable (D4.1.3). Separation of 3-HPA from glucose based fermentation broth has been demonstrated in 10 L scale (D4.1.6), while separation of biomass hydrolysate based fermentation broth has not been attempted due to constraints on resources (biomass hydrolysate availability) and time (3-HPA value stream discontinued). In principle, upscaling to pilot plant could be performed by now, but due to the low TRL this activity would not create value.

Deviation from objectives and corrective actions

Upscaling to pilot has not been attempted because of too low TRL. This means that the process cannot be demonstrated and no 3-HPA can be produced for further work in WP5.5. However, further work in WP5.5 is not relevant because 3-HPA value stream is discontinued.

Innovation brought and technological progress

None

Analysis of the results

N/A

Impact of the results

N/A

Related IPR

N/A

Conclusion

Biomass hydrolysate pilot fermentation and separation of 3-HPA has not been done because the 3-HPA value stream has been discontinued. No 3-HPA has been produced for WP5.5.

ANNEX II – Milestone achievement

This deliverable proves that milestones M4.7 and M4.8 both planned at M36 are no longer relevant.

Since the 3-HPA value stream is discontinued acceptance of impurity profile for dehydration of 3-HPA (M4.7) is irrelevant because no dehydration will be performed.

Production of 3-HPA for WP5.5 (M4.8) is not relevant because all work on 3-HPA in WP5.5 is part of 3-HPA value stream (and thus discontinued).