

DEEP PURPLE



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phytochemistry @
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CONVERSION OF DILUTED MIXED URBAN BIO-WASTES INTO SUSTAINABLE MATERIALS AND PRODUCTS IN FLEXIBLE PURPLEPHOTOBIOREFINERIES

Stakeholderdialog Biobased Industry, Wien 14. Dezember 2020

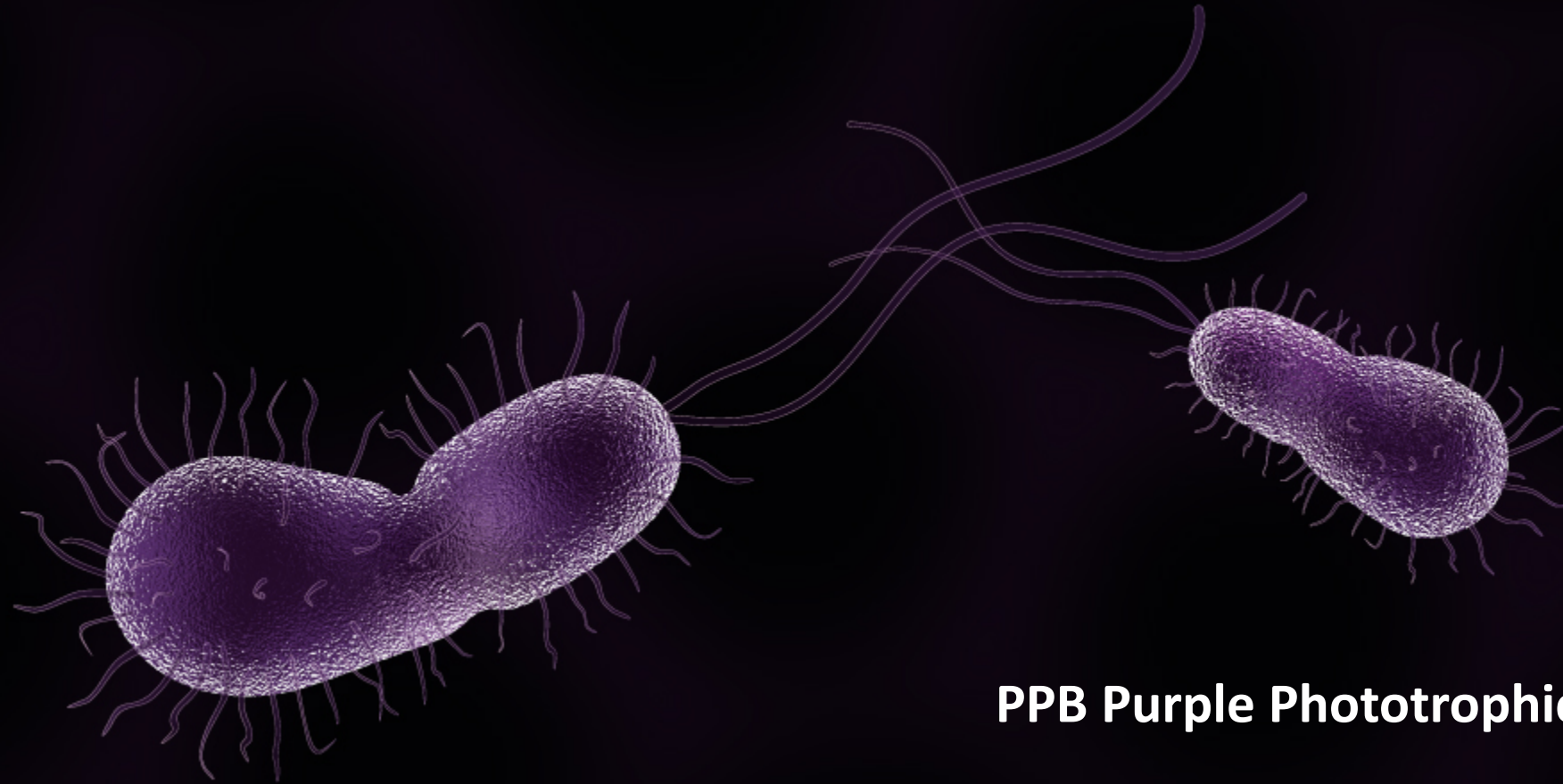
DI Helene Pattermann / alchemia-nova Research & Innovation gemeinnützige GmbH



“This project has received funding from the Bio Based Industries Joint Undertaking (JU) under the European Union’s Horizon 2020 research and innovation programme under grant agreement No 837998. The JU receives support from the European Union’s Horizon 2020 research and innovation programme and the Bio Based Industries Consortium.”.



Der Star des Projektes



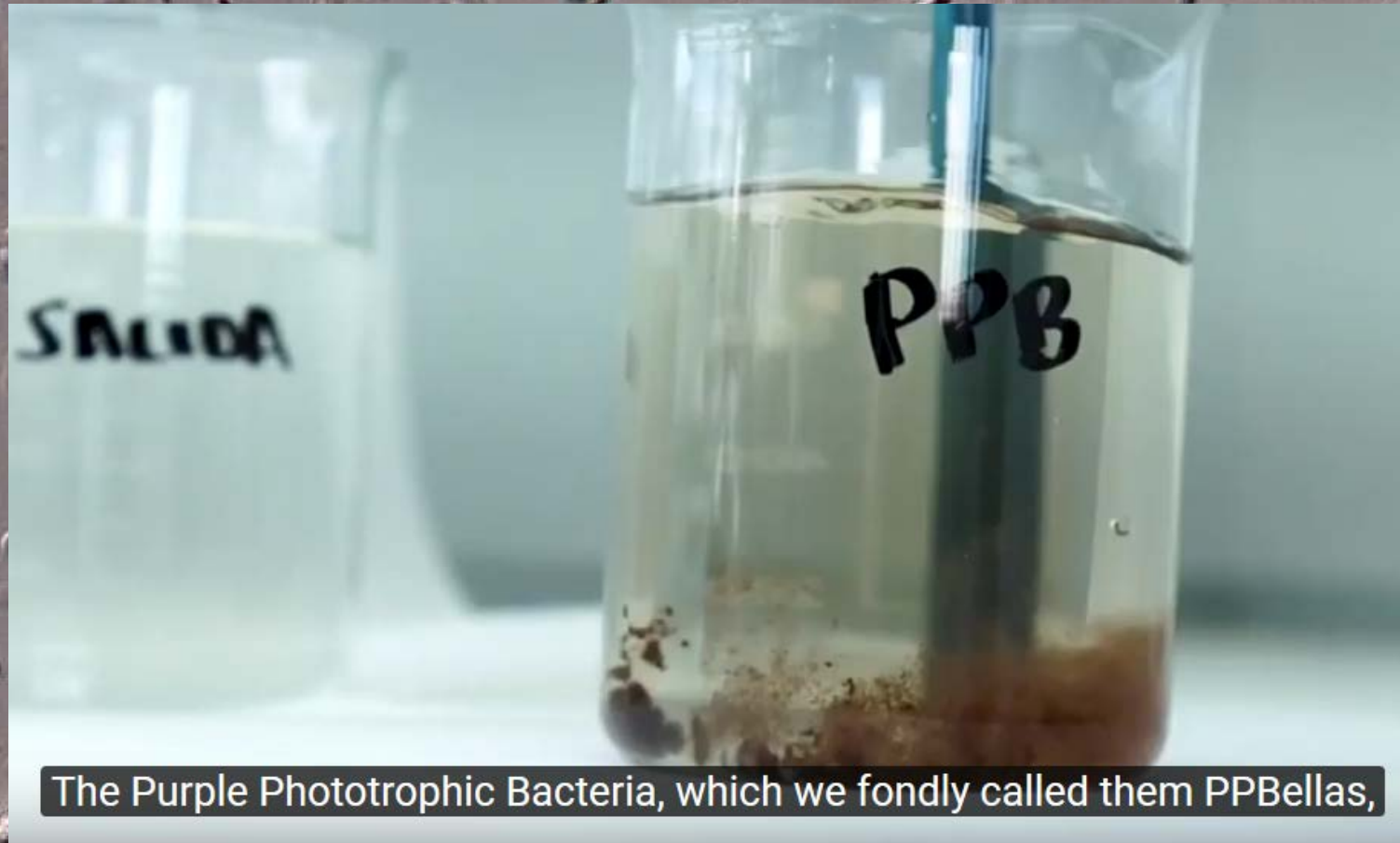
PPB Purple Phototrophic Bacteria



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Der Star des Projektes



The Purple Phototrophic Bacteria, which we fondly called them PPBellas,



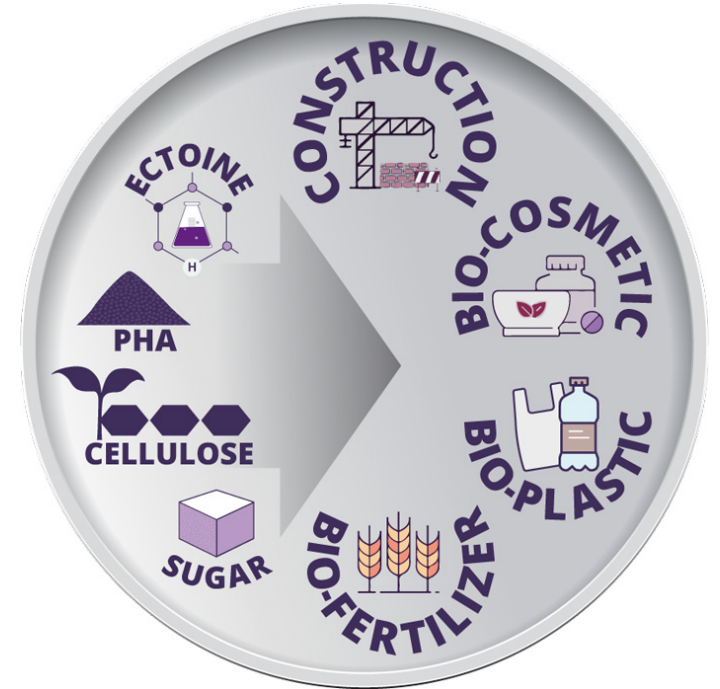
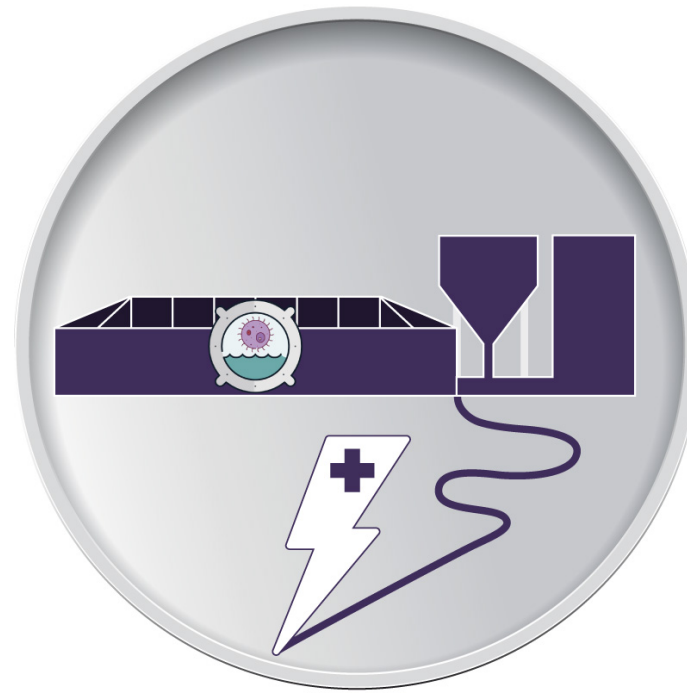
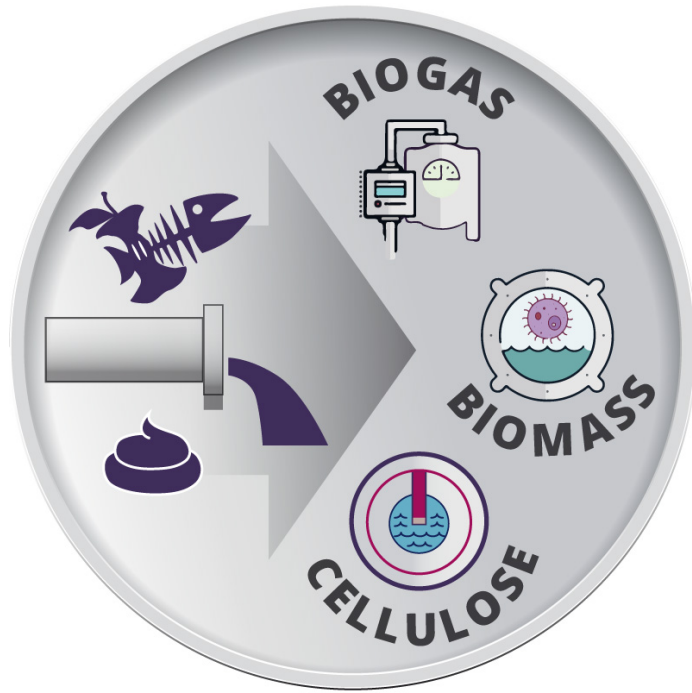
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Projektziele



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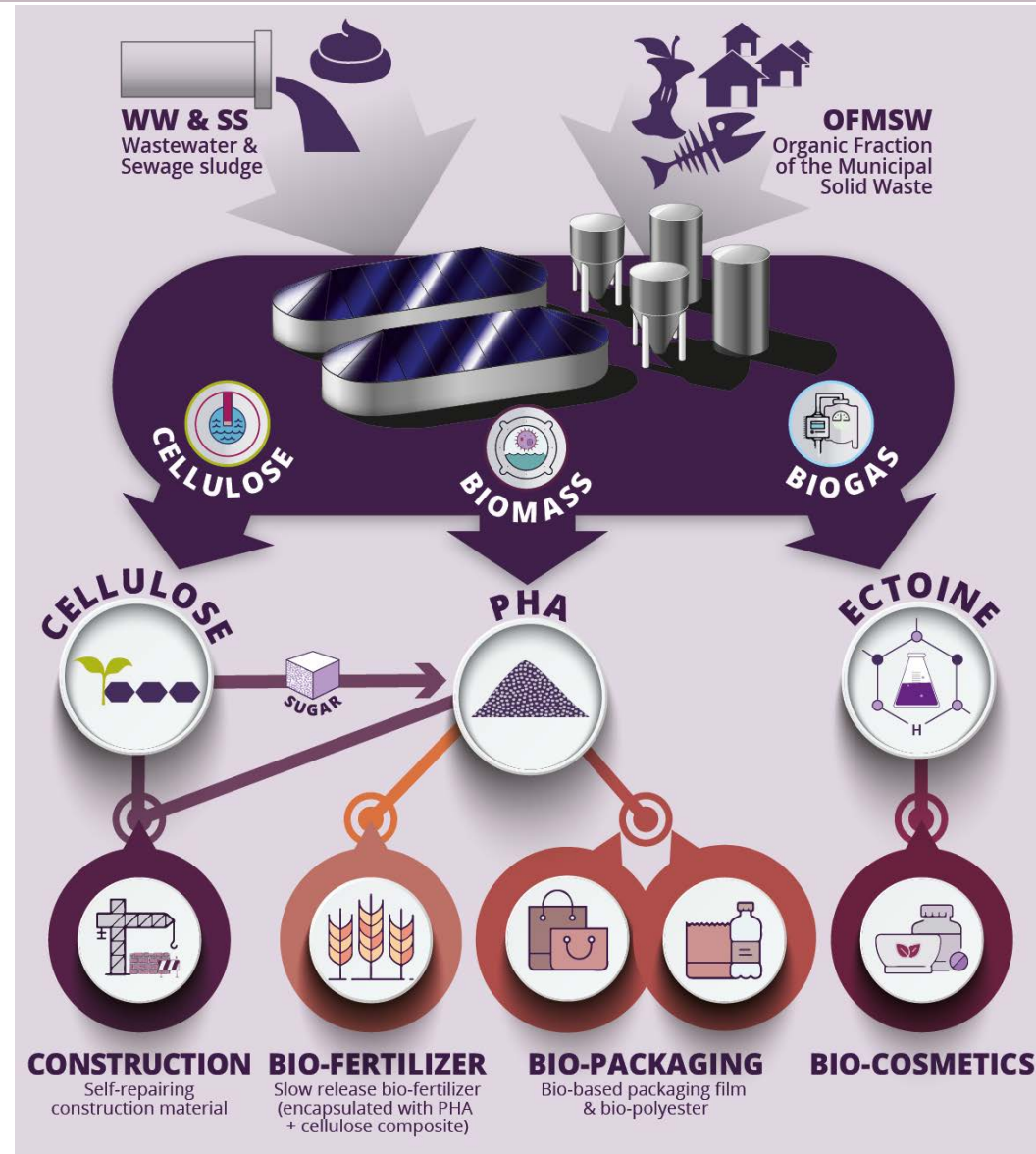
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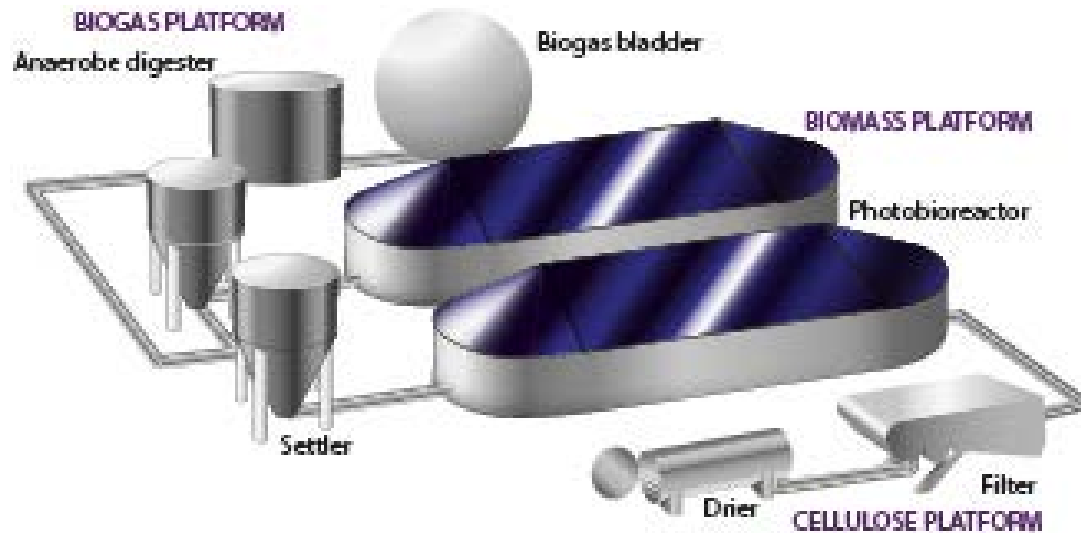
Projektziele



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Der echte Star: Die vielseitige, integrierte und flexible Multi-Plattform-Bioraffinerie



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Ziele in DEEP PURPLE



- Behandlung von 422 t/J OFMSW und 438.000 m³ /J gemischte Abfälle
- **Produktion: 440 t/J Bioprodukten**
- **Treibhausgasemissionen: minus 11.300 tCO₂eq / Jahr**
- **Deponierten OFMSW minus 60%**



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Projektteam

PARTNERS

DEEP PURPLE

RECOVER ENERGY & VALUABLE RESOURCES
from urban waste streams
IN PHOTOBIOREFINERIES

with the help of
PURPLE PHOTOTROPIC
BACTERIA

WWW.DEEP-PURPLE.EU




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DEEP PURPLE DEMO SITES

 **Demo Site 1:** WWTP Estiviel (Toledo, Spain)

 **Demo Site 2:** Czech Republic

Production sites

-  All-RG fertilizers production plant (Saint-Malo, France)
-  Mater-Biotech demo facility (Terni, Italy)
ITENE facilities (Valencia, España)
NVMT pilot plant (Novara, Italy)
-  RNB facilities (Valencia, Spain)
ACTIV facilities (Coventry, UK)
-  Brunel University (London, UK)



The largest photobiorefinery based on PPB



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ERSTE ERGEBNISSE: 2 Publikationen

- Die **Alkalität** und nicht der Oxidationszustand des organischen Substrats ist der Schlüsselfaktor bei der häuslichen Abwasserbehandlung durch gemischte Kulturen lila phototropen Bakterien.
- **Kopplung der thermischen Hydrolyse mit anaerobem Aufschluss und Photogärung**

<https://deep-purple.eu/results/>



resources

ScienceDirect



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Highlights:

Kopplung thermische Hydrolyse mit anaeroben Aufschluss

- Umwandlung von Bioabfällen durch Behandlung mit purpurphototrophen Bakterien
- Die Zeit hatte keinen Einfluss auf die Gesamtleistung bei der Vorbehandlung mit thermischer Hydrolyse.
- 15% der gesamten Feststoffe wandelten sich in Produkte mit hoher Wertschöpfung um.
- Hohe Biomasseausbeute bei der Photogärung.



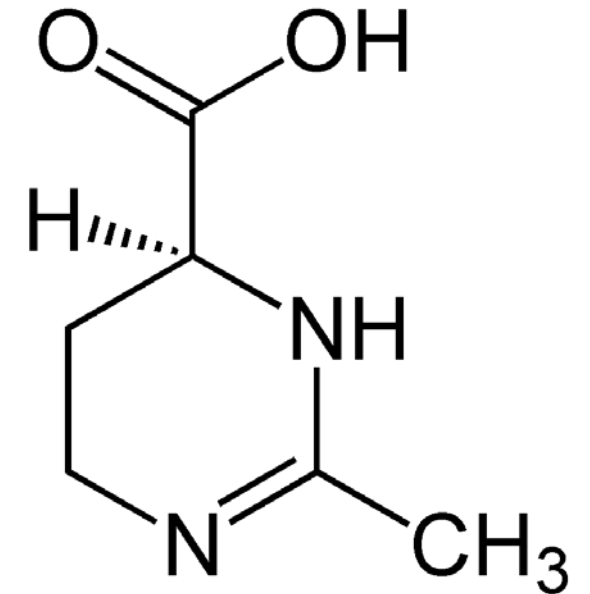
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Weitere Zwischenergebnisse: Biomilking



innovatives Ectoin-Bio-
Melkverfahren bei
Methanotrophen
validiert



<https://deep-purple.eu/bioconversion-of-biogas-into-ectoine/>



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Weitere Zwischenergebnisse: Zellulose extrahiert

- Zellulose aus Klärschlamm gewonnen
- effiziente Methode zur Verzuckerung der dekontaminierten Cellulose entwickelt
- hochkonzentrierte 2^oG-Zuckerlösung für Herstellung neuer Biomaterialien gewonnen

<https://deep-purple.eu/cellulose-recovered-from-sewage-sludge/>



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Pilotbioraffinerie in Spanien gestartet



[https://deep-purple.eu/
pilot-scale-photobiorefinery-implemented/](https://deep-purple.eu/pilot-scale-photobiorefinery-implemented/)



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In Kontakt bleiben

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follow us



NEWSLETTER



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Vielen Dank
für Ihr
Interesse!



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