

BBteK

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The Green Cow Company

Milking



of Hydrocarbons

from Algae

G₃ Biofuels originate from micro-algae

- Algae cultivation does not compete with food production
- Algae have higher lipid content than other plants :
30 -120 T vs 2-6 T/Ha/Y for traditional oilseeds

The BBteK program

- Identification of a unique micro-algae species
*Botryococcus braunii**
- Exploitable with a simplified
& cheaper industrial process

*Isolated, described and studied for more than 20 years by Dr Pierre Metzger and Dr Claude Largeau

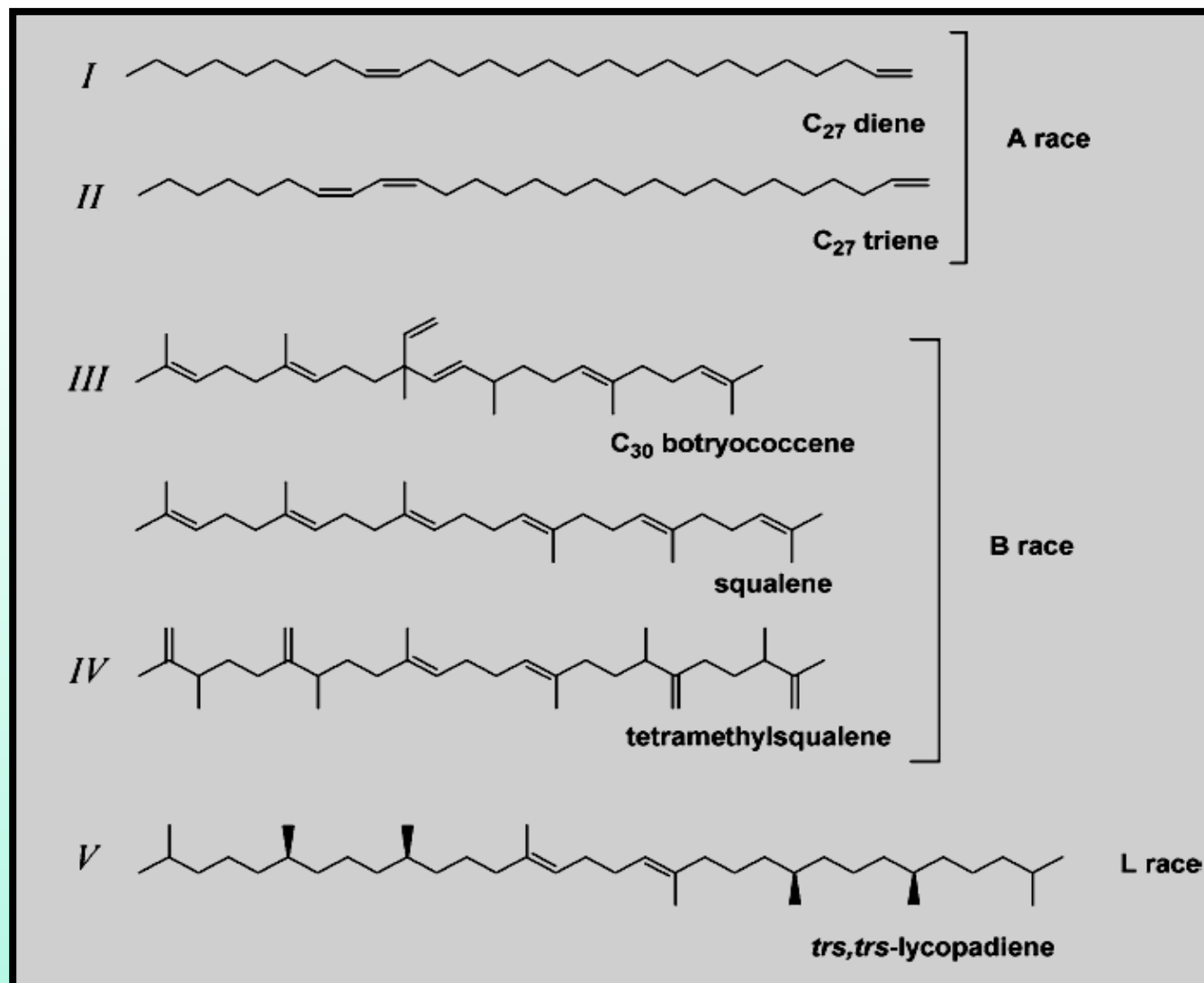
Botryococcus braunii (BotC)

- Colonial chlorophyceae
- Grows in fresh, brackish and/or waste waters
- **Excretes oil, hydrocarbons without nutritional stress**

B. braunii colony



Hydrocarbons from race A, B & L



BotC's Hydrocarbons

- Non volatile, odorless
- A “**SuperBiodiesel** » source
 - Easily convertible into diesel-type fuels
 - Clean fuel : no sulfur derivatives, no aromatic compounds
 - Higher energy content than any other biofuels
 - Suitable to produce higher value fuels such as **Jet-A1**
- A new road for Green Chemistry

Part A : unlocking the bounty 2 year program

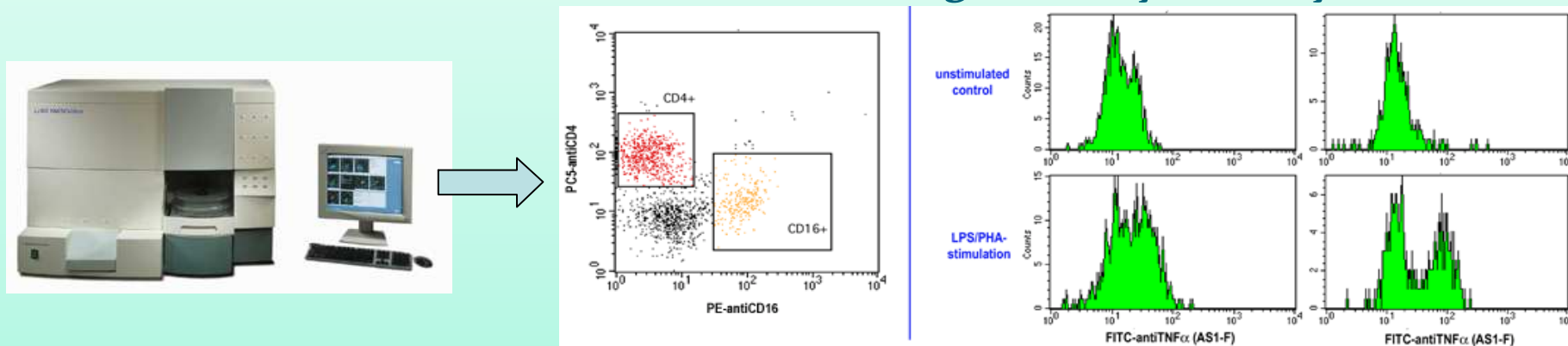


High Through-put screening of variants

Micro-well culture



Fluorescence-activated cell sorting / flow cytometry



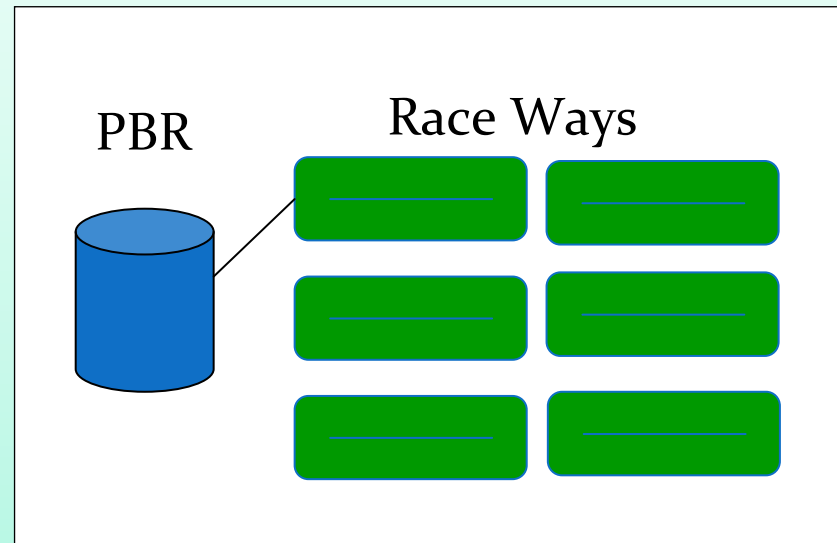
Part B : Production



Stable cultivation in OP

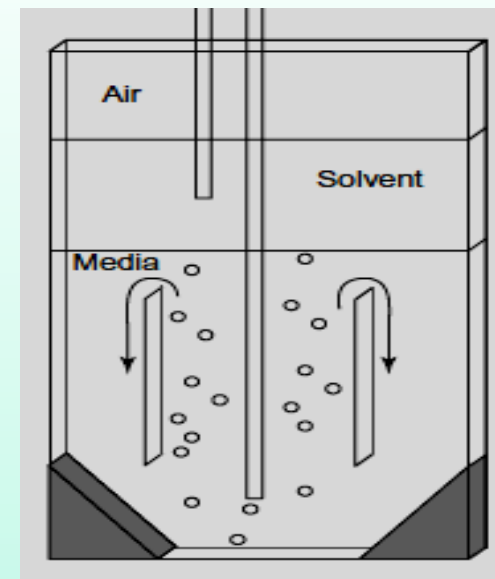
- Produce BotC strains able to grow in industrial environments : variants
- Implement 2-step culture with a controlled seeding unit

Coupled
System



HC extraction

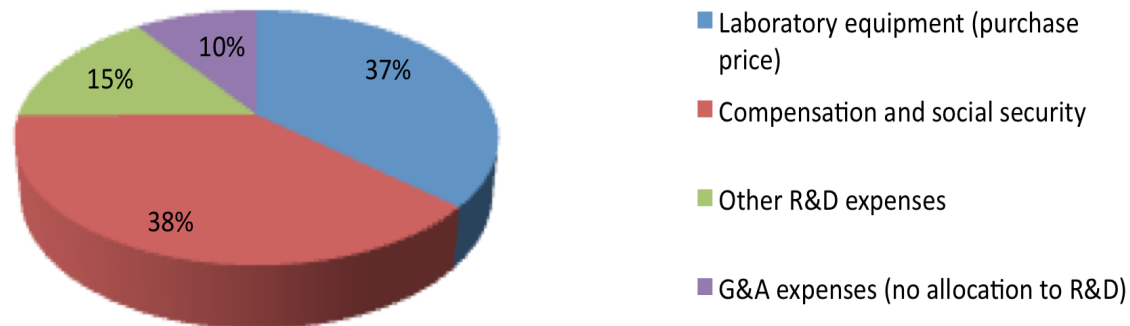
- Take advantage of BotC's HC excretion capability
- Algae milking rather than harvesting
- Continuous oil extraction of algal cells can be performed with existing industrial technology (hexane)
- New oil-extraction methods must be designed (REACH)



2-year R&D program : financials

Estimated total cash expenses over first 2 years :
€ 2.3 million

Breakdown of 2-year cash expenses



Production facilities : investments

1 Euros = 1.5 USD

1000 Ha : 30 M Euros

