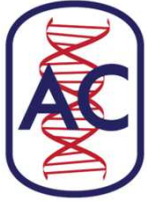


Active Cells srl

www.activecells.it



**BIOECONOMIA ED ECONOMIA CIRCOLARE:
NUOVE OPPORTUNITA' DI SVILUPPO
TERRITORIALE** Genova, 29/09/17
Giancarlo Dondo



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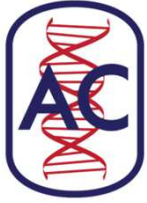
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Start of activity 09/2011 as a Spin Off of Analisi & Controlli S.r.l.

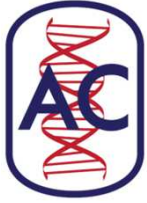
Skills: Biotechnology and Industrial Microbiology.

Activity : execution of R/D projects and bioproductions for pharmaceuticals and chemical companies.

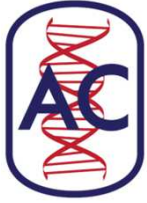




- **Microbiologia Industriale/ Biotecnologia**
- **Definizione di protocolli di fermentazione per la produzione molecole r-DNA, metaboliti secondari e biotrasformazioni**
- **Miglioramento delle rese di processo**
- **Bioremediation /Biodepurazioni**

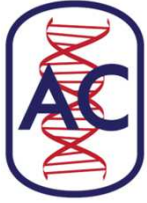


- **Espressione di Proteine Eterologhe in Cellule di E.Coli in Fermentatore (Farmaci , Enzimi)**
- **Lieviti per la Sintesi di Chemicals ed Enzimi**
- **Biotrasformazioni di Prodotti per Industria Farmaceutica e Alimentare**
- **Selezione e Produzione di Lieviti per Pasta congelata e per Enologia**
- **Prodotti Chimici da Biomasse Algali (betacarotene) /biofuel**
- **Produzione di Funghi Per Decontaminazioni Ambientali**



- **Bioplastiche** ad es. Polyhydroxybutyrate e Bio Nylon

Integrazione e progressiva sostituzione delle plastiche che derivano da fonti fossili : ad esempio con biopolimeri quali polyhydroxybutyrate (PHB). In generale si può considerare che questi materiali hanno proprietà fisiche simili a quelle che derivano da fonti non rinnovabili quali polypropylene (PP) and polyethylene (PE), ed hanno il potenziale per la sostituzione almeno in una parte delle applicazioni su larga scala. Questi materiali sono da considerarsi neutri nel ciclo del carbonio e le loro tecnologie di produzione hanno impatto ambientale contenuto. Ad oggi il costo è più elevato e l'impiego di materiali alternativi per la produzione è una via promettente per aumentarne il potenziale.



- The depletion of the fossil resources in the near future is a economic and security issue . **Currently about the 10% of the oil production it is used for the chemical industrial productions.**
- Lignocellulosic biomass is a potential source for several bio-based products “ bulk chemicals” according to the bio-refinery approach.
- Most promising lignocellulosic and other wood process residues will be treated with innovative technologies to obtain high-value added fine chemicals, to be used as chemical building blocks. An interdisciplinary approach, including biotechnology: enzyme technology and fermentation, catalysis, and reactor design (catalytic membrane reactor), will be adopted to develop an alternative environmental friendly technology.
- **Ruolo della biotecnologia : produzione di enzimi.**

WP6.3: Technology application

The workplan in 2017 -2019 will be divided into the following main areas:

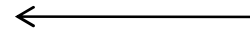
1. Lignocellulosic and other wood process residues will be treated with an innovative physical reactor with the aim to obtain hydrolyzate/s treatable enzymatically.
2. The hydrolyzate/s will be used as a selection substrate for the isolation of microbial enzyme producers. The selected strains will be scaled up for the enzyme production.
3. The hydrolyzate/s after the enzyme treatment will be fermented with proper microbial strains to produce chemicals:



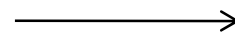
Hydrolyzate/s (+ mineral salts) will be used as a selection substrate for the isolation of microbial enzyme producers.

In house microbial enzyme production.





The hydrolyzate/s after the enzyme treatment will be fermented, with proper microbial strains, to produce chemicals on the basis of the physiological ability of the strains:



- organic acids as a building block of bioplastics.
- chemical "green" solvents.

Grazie per l'attenzione

