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\*\*\*\*\* (english version)

To all SUNCHEM's partners and friends.

The Sunchem Holding Company operates worldwide in managing rights to use of international patent PCT/IB/2007/053412 that relates to Tobacco for Energy - innovative non-food oil producing cultivation developed for energy purposes.

We are pleased to inform you of the main objectives attained by the Sunchem Holding Group worldwide, as regards research and as far as the industrialisation phase is concerned.

## **RESEARCH AND DEVELOPMENT**

The workgroup headed by Prof Corrado Fogher (Plantechno - a Sunchem Holding Partner) is made up of:

Nicola Fogher  
Serena Reggi  
Stefano Gattolin  
Kiril Perfanov

These graduates with extensive experience are all skilled in the research sector applied to genetic engineering dealing with plants. They have been working with Corrado Figher for a number of years.

The principal results of their genetic activity and the goals set for the research are summarised below:

### **1) Engineering Tobacco oil fatty acid composition to suit different industrial applications by targeting key metabolic biosynthetic enzymes.**

This topic takes in various modifications including:

- Varieties rich in Oleic acid.
- Greater oil percentage content in the seeds.
- Varieties specifically designed for various sectors such as paints, pharmaceuticals, Fruit loosening agent, lubricants, etc.

### **2) Metabolic engineering of Tobacco for short fatty acid**

**accumulation in the seed oil, more suitable for jet fuel production.**

**3) Improvement of tobacco photosynthetic efficiency in hot climates.**

**4) Engineering the  $\beta$ -carotene biosynthesis pathway in Tobacco seed to obtain an oil with high resistance to oxidation.**

To complete this overview, Sunchem's partner, Plantechno, is also engaged in other research activities, specifically:

- Production of oral vaccines for zootechnic use.
- Production of the APO-1 Milan (anti-cholesterol) protein in rice
- Production of human lactoferrin protein in soya
- Production of lysosomal enzymes in plants
- Production of the glucocerebrosidase protein (a therapeutic protein for a rare disease) in plants.

**Plantechno** ([www.plantechno.com](http://www.plantechno.com)) also has patents that have been applied for and accepted internationally, including:

- 'Food Flours with Specific Technological Characteristics and Low Allergenicity'. International Patent Application No. PCT/ITB2003/05092.

This patent covers a new hypoallergenic cereal suitable for producing foods for coeliac disease sufferers.

- 'Expression of lysosomal enzymes in plant seeds' WO 03/073839 A2.

A patent that covers the production of various therapeutic enzymes in plants.

- 'A synthetic polynucleotide coding for human lactoferrin, vectors, cells and transgenic plants containing it', WO 00/04146 US patent n. 7,276,646.

- 'In-plant production of dimeric and/or oligomeric (comprising three or more units) forms of human APO A-1 protein muteins'. International Patent Application No. PCT/IB2006/054948.

International patent for a molecule that is useful for counteracting the cholesterol level in the blood.

- 'In-plant production of dimeric and/or oligomeric forms of APO A-1 protein'. Italian patent n° RM2006A000439.
- 'Dimeric and oligomeric forms of human Apo A-1 protein that contain

three or more mutein units'. Italian patent n° RM2006A000661.  
- 'Analytical method for detecting the presence of products derived from crustaceans in foods' RM2006A000070.

In the area of research, Sunchem's Holding partner, **InCura**, operates in the diagnostic kit sector for all analytical laboratories ([www.incura.it](http://www.incura.it))  
InCura's laboratory employs experts in the sector:

Greta Immobile

Sforza Enza

Luca Ferrari

Contesini Claudia

Marco Cuccurachi

Beneduci Barbara

Monica Gevi

Currently InCura operates internationally (USA, Spain, France, Germany, Finland, Austria, Turkey, England and Japan) with partners already involved in selling analysis kits worldwide.

InCura's current projects include:

- CELLULASE (Production of second generation bioethanol from residual agricultural lignocellulosic biomass)
- MASTFLOW (Development of lateral flow to detect infective agents that cause mastitis in milk cows)
- LACTOFERRIN 2 (Development of a recombinant expression system for producing human lactoferrin with an anti-bacteria, antiviral, and anti-tumour action).
- ALLERGENS (Putting together nanotechnological devices and biosensors for detecting allergens in foods of animal and vegetable origin).

## **SUNCHEM - INDUSTRIALISATION OF THE ENERGY TOBACCO PROJECT**

The Company is busy worldwide with industrialising the energy tobacco project. Industrial development is proceeding in a balanced manner in the various countries in which we are involved with our "premium partners": in Brazil with M&V and Terasol, in the USA with Tyton Bioscience Corporation, in Namibia with Urafield, in Italy and

North Africa with Alphatrading, and in Senegal with Oleo Sud (Diester-Novaol Group).

We are continuing with partner / scouting activities to open new markets (Russia, China, Japan, Indonesia and Central America).

In Italy we have the first extensive industrial cultivation spread evenly from North to South.

Some pictures herein attached that shows some worldwide field of energy tobacco. Especially near Verona that will be harvested for the first time in early August. All the other fields will be dealt with in succession.

The Sunchem Holding Group is on track with its industrial plan and Italy is the final launch site for the project that sets Sunchem up to become the first integrated genetics chain in the market and in the world.

The Management, Massimo Ghilardi and Sergio Tommasini, wish to thank everyone that is making a contribution to the success of this initiative.

Yours sincerely,

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Dott. Sergio Tommasini  
SUNCHEM HOLDING  
Managing Director

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