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Patrick Borel

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***In vivo* studies planned in the European Integrated project “Lycocard” (Role of lycopene for the prevention of cardiovascular diseases)**

Patrick Borel

INSERM, U476 « Nutrition Humaine et Lipides », Marseille, F-13385 France; INRA, UMR1260, Marseille, F-13385 France; Univ Méditerranée Aix-Marseille 2, Faculté de Médecine, IPHM-IFR 125, Marseille, F-13385 France.

Epidemiologic studies suggest that lycopene-rich foods, i.e. tomatoes and tomato products, may provide protection against cardiovascular diseases. However, there are many details regarding bioavailability, metabolism, and molecular mechanisms involved in lycopene biological activities that are still unknown. Lycocard's *in vivo* studies consist of both animal and human trials aiming to answer the main following questions:

- do genetic polymorphisms in putative intestinal transporters of lycopene affect lycopene absorption efficiency ?
- does absorption efficiency depend on lycopene cis-trans isomerisation ?
- what are the main lycopene metabolites produced in the body ?
- what is the concentration of lycopene and its metabolites in tissues ?
- what is the role of lycopene on gene activation ?
- what is the effect of lycopene on redox status ?
- does lycopene improve endothelial function ?

In vivo studies have been organised into work packages listed in the table below

WP 15	Determination of nuclear receptor activation by lycopene, lycopene (Z)-isomers/metabolites and tomato preparations in transgenic animals (<i>Dr R. Rühl, Debrecen University, Hungary</i>)
WP 16	Analysis of the redox status of mononuclear cells isolated from chronic smokers and hypercholesterolemic patients before and after supplementation of a tomato-rich diet (<i>Dr P. Palozza, Roma University, Italy</i>)
WP 17	Effect of polymorphisms in intestinal lycopene transporter(s) on lycopene bioavailability (<i>Dr P. Borel, INRA/INSERM/Marseille University, France</i>)
WP 18	Evaluation of oxidative stress and lipid status in human plasma: influence of smoke exposure and lycopene supplementation (<i>Dr G. Lowe, Liverpool University, UK</i>)
WP 19	Study of lycopene isomerization in human plasma by isotopically labelled lycopene (<i>Dr V. Boëhm, Jena University, Germany</i>)
WP 20	Evaluation of atherosclerosis prevention by lycopene in animal models (<i>Dr V. Stangl, Charité Berlin, Germany</i>)
WP 21	Effects of lycopene and different tomato products on endothelial function in humans (<i>Dr V. Stangl, Charité Berlin, Germany</i>)
WP 22-23	<i>In vivo</i> effect of diets enriched with traditional and newly developed tomato products on obese and normal weight subjects (<i>Dr A. Mordente, Nutriunit Roma, Italy</i>)

The project started April 1, 2006 and will end in march, 31, 2012. Results produced by the different WP will be available regularly during this period and will be added on the Lycocard website www.lycocard.com.

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