

TITLE: Metabolomics in Scalp Seborrheic Dermatitis Evidenced Key Changes in Inflammatory Markers Following a 10-Week Scalp Care Scheme with an Anti-Dandruff Shampoo

AUTHORS:

Camille Génès^{1*}, Martine Maître¹, Sophie Baradat¹, Mélanie Froliger¹, Virginie Turlier¹, Aurélie Mercadié¹, Aimée Simcic-Mori¹, Eléonore Gravier¹, Christophe Lauze¹, Céline Huyghe¹, Sandrine Alvarez-Georges¹, Nathalie Chansard¹, Rasvan Marinescu¹, Pascal Reygagne², Sandrine Bessou-Touya¹, Valérie Mengeaud³, Hélène Duplan¹

AFFILIATIONS:

1 Pierre Fabre Dermo-Cosmetic and Personal Care, Research & Development, Toulouse, France.

2 Centre de santé Sabouraud, Paris, France.

3 Laboratoires Dermatologiques Ducray, Direction Médicale, Lavaur, France.

***CORRESPONDING AUTHOR:**

Camille Génès

Pierre Fabre Dermo-Cosmetic and Personal Care,
Research & Development,

3 Avenue Hubert Curien – BP 13562

31100 Toulouse

France

E-mail: camille.genies@pierre-fabre.com

ORCID: 0000-0003-3535-4530

Supplementary materials

Table S1. Demographic and clinical characteristics of participants in the metabolomic analysis.

	Test group	Control group	Whole group
Parameters	N = 16	N = 16	N = 32
Age in years, mean $\pm$ SD	36.1 $\pm$ 12.3	35.8 $\pm$ 10.6	35.9 $\pm$ 11.2
Sex, n (%)			
Female	12 (75.0)	13 (81.3)	25 (78.1)
Male	4 (25.0)	3 (18.8)	7 (21.9)
Dandruff severity score, mean $\pm$ SD	30.9 $\pm$ 10.7	29.9 $\pm$ 8.3	30.4 $\pm$ 9.5

Abbreviations: n, number of subjects; SD, standard deviation.

Fig. S1: Metabolites significantly modulated following the intensive phase (whole group) and the maintenance phase (control group) of the intervention, classed according to metabolite families and sub-families.

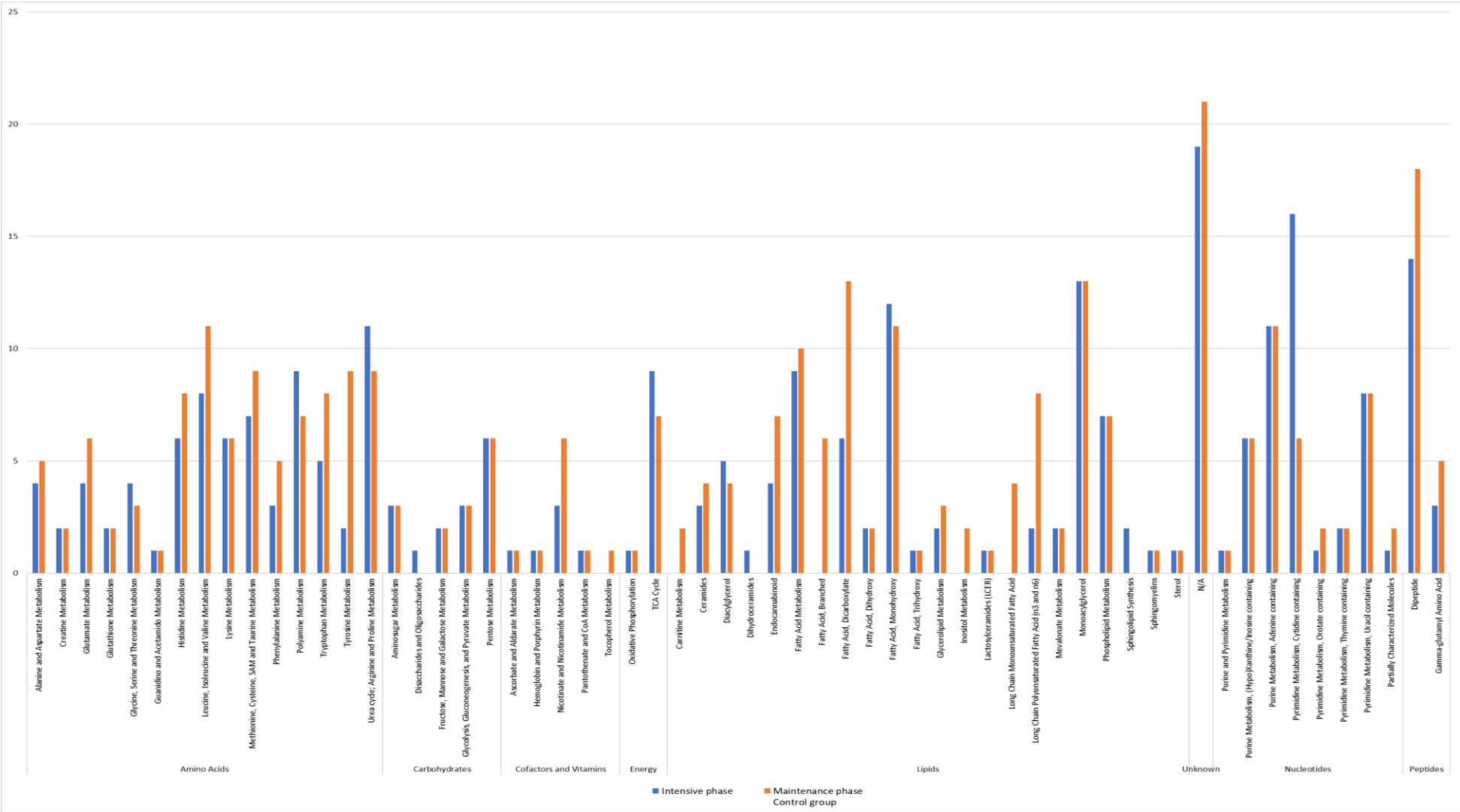


Fig. S2: Venn diagram of significantly modulated metabolites showing opposite changes between the intensive phase and the maintenance phase in the control group. (A) Of the 184 metabolites downregulated during the intensive phase, 171 were upregulated in the control group during the maintenance phase. **(B)** Of the 91 metabolites upregulated during the intensive phase, 61 were downregulated in the control group during the maintenance phase.

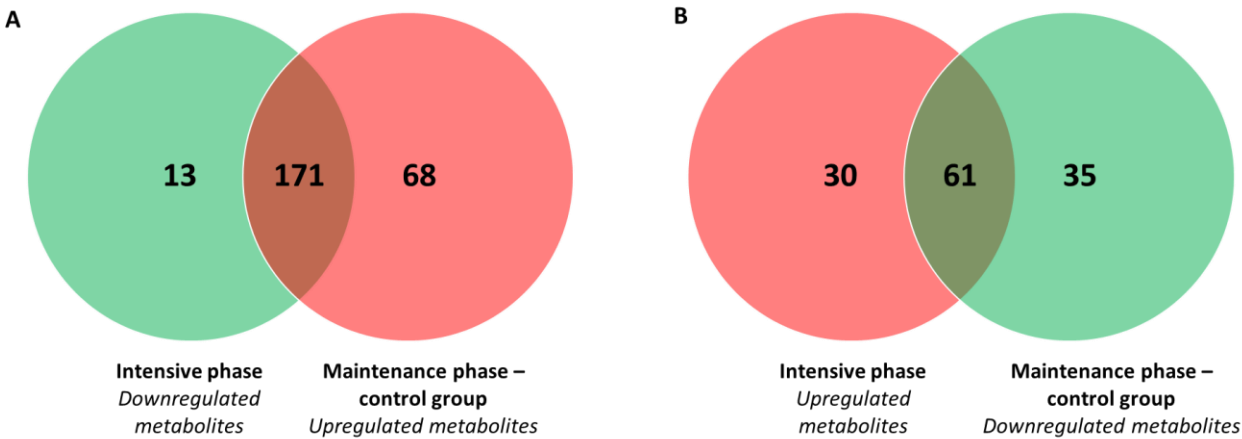


Fig. S3. Sunburst diagram of metabolites significantly modulated in the control group following the maintenance phase, classed according to main metabolite families. Metabolites identified as related to xenobiotic metabolism were excluded as their modulation was unlikely to result from the intervention.

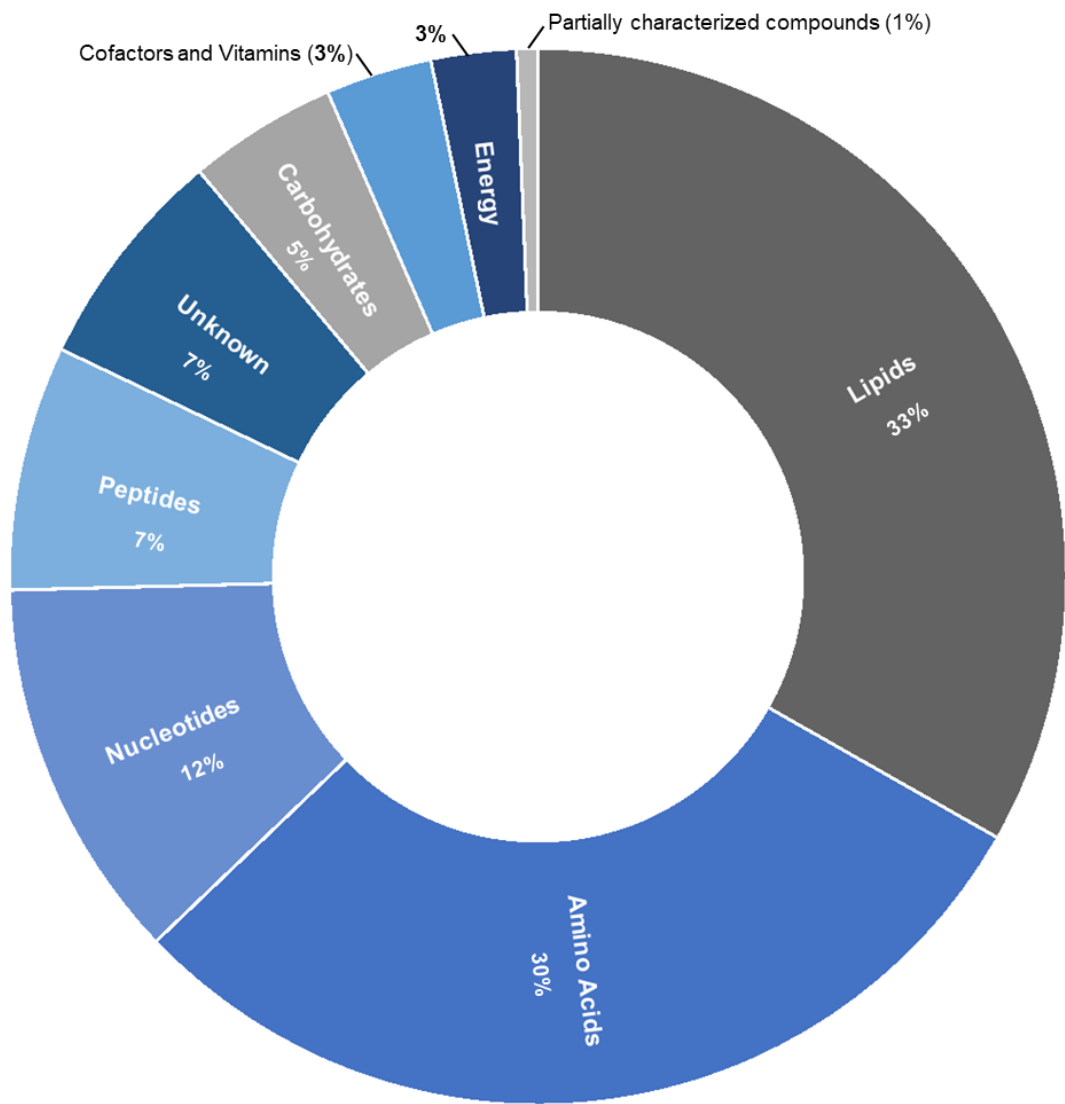


Fig. S4. Differential heatmap of lipids involved in lipolysis by *Malassezia* fungi following the intensive phase (W2 vs. W0) and the maintenance phase (W10 vs. W2) of the intervention in the control and test groups.

