flora on the expression of the key mitochondrial enzymes, HMGCoA synthase and glutaminase.

Materials and methods: The following groups of rats (aged 3 months) were used: germfree (GF), conventional (CV), 2, 14 or 30 days after an inoculation of a conventional flora (IN) or 30 days after an inoculation of a flora that produces (*Clostridium paraputrificum*, CP) or does not produce (*Bifidobacterium breve*, BB) butyrate. Glutaminase activity was measured in isolated colonocytes. Colonic mucosa HMGCoA synthase was analysed by western and northern blotting.

Results: Activity of glutaminase was significantly lower in the group IN (30 days) when compared to germfree group (–55 %, $P < 0.05$) but similar to that of the conventional group. Similar results were obtained 2 days after inoculation. The levels of HMGCoA synthase mRNA and immunoreactive protein were similar in inoculated and conventional rats. Glutaminase activity in the BB group was not different from germfree animals, whereas CP rats had lower glutaminase activity, similar to that of conventional rats.

Conclusions: These results confirm that colonocyte butyrate and glutamine metabolism is controlled by the flora and show that the enzymes studied were valid markers of colonocyte metabolism. The rapid effect after inoculation implies a role for the production of bacterial metabolites, and comparison of CP and BB groups suggest that butyrate is involved.

Dietary fibre and enzymatic activity of the rabbit caecal flora. T. Gidenne, V. Pinheiro (Station de recherches cunicoles, Inra, BP 27, 31326 Castanet-Tolosan, France)

An overly large reduction of the dietary fibre intake could lead to serious digestive troubles for the rabbit, which could be associated with a dysfunction of the caecal flora activity. The present study aimed to estimate the bacterial fibrolytic activity (BFA) for adult rabbits, fed ad libitum a control and a fibre deficient diet (NDF = 43.5 versus 26.4 %), and without changes in the fibre nature. The intake and the faecal digestibility were measured for 4 days, after a 10-day adaptation period. BFA was then measured on soft faeces according to the method of Jehl et al. (Jehl N., Gidenne T., Le Roux J.F., Proc. 6th World Rabbit Congress, 9–12 July, ASFC, 1996, vol. 1, pp. 199–203). Data (means and residual standard error 'SEM') were subjected to a monofactorial analysis of variance *(table below)*.

A half reduction in the fibre intake resulted in a similar decrease in the pectinasic and cellulasic BFA, whereas xylanasic BFA and fibre digestibility were not significantly affected. Only pectinasic BFA was correlated ($r^2 = 0.58$; $n = 14$) with the quantity of fibre digested. Although the BFA was affected by a high inter-individual variability, this criterion seems relevant to appreciate the caecal flora activity according to the dietary fibre supply.

Diets	Fibre intake (g NDF/d)	BFA (nmoles red. sug. lib./g DM/h) Cellulase	Xylanase	Pectinase	NDF digestibility (%)	Fibre digested (g NDF/j)
Control ($n = 8$)	64.2	22	121	497	42.4	26.0
Deficient ($n = 8$)	35.8	12	89	223	44.0	15.3
SEM	2.7	3	15	52	1.0	0.9
Stat. signif.: P	< 0.001	0.019	0.16	0.002	0.31	< 0.001