Prebiotic potential has been ascribed to indigestible carbohydrates increasing the beneficial intestinal microflora (i.e. *Lactobacillus*) by fermentation. However, the development of lactobacilli is low in the *in vitro* gas fermentation model.

**Objective:** Develop the lactobacilli during the fermentation by adding mucus in the model.

**Materials and Methods**

- **Substrate:** Inulin or Cellulose
- **Incubation:** (39°C, gentle agitation)
- **Broth samples collection after 8, 24 and 72h**
- **Fermentation Kinetics (modelisation)**
- **Lactobacilli quantification by numeration on MRS plates and Real Time PCR**

**Results**

- **Fermentation kinetics**
  - Effect of mucin on fermentation kinetics
  - Volume of gas production
  - Fermentation rate

- **Lactobacillus evolution in fermentation medium**
  - Inulin: Lactobacilli population (substrate-dependent)

**Conclusion**

The addition of mucin-covered microcosms in the *in vitro* gas fermentation method will allow a better assessment of the prebiotic potential of indigestible carbohydrates.