

Identification of target antigens of antibodies in inflammatory bowel disease: Seroreactivity to *Faecalibacterium prausnitzii* and *Bifidobacteria*.



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Introduction:

- Hypothesis: IBD is caused by an aberrant immune response towards commensal bacteria in genetically predisposed subjects.
- Dysbiosis exist in IBD patients: a reduction of *F. Prausnitzii* and *Bifidobacteria* was detected.
- Up to 80% of IBD patients show sero-reactivity to bacterial antigens.

Aim:

Do IBD patients show seroreactivity against *F. prausnitzii* and *Bifidobacteria*?

Methods:

Seroreactivity : 2D gelelektrophoresis
Western blotting
Bacterial profiling : Denaturing gradient gel electrophoresis (DGGE)

Patients:

4 UC patients
8 CD patients
8 healthy controls (HC)

Results *F. Prausnitzii*:

- No clear differences in seroreactivity against *F. prausnitzii* were detected between UC patients, CD patients and controls, except for one prominent spot that was detected in 3 of 4 UC patients, 6 of 8 CD patients and 1 of 8 HC (faint spot).



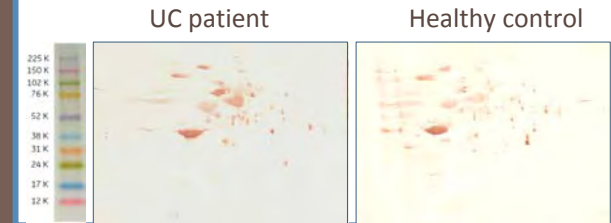
- In a cohort of 4 CD patients and 4 HC we found that the absence of the spot on western blotting corresponded to the fecal absence of *F. prausnitzii*, represented by the relative intensity of the *F. prausnitzii* band on DGGE:

| | CD 1 | CD 2 | CD 3 | CD 4 | HC 1 | HC 2 | HC 3 | HC 4 |
|---------------------------|------|------|------|-------|-------|------|------|------|
| Spot | | | | | | | | |
| Relative intensity (DGGE) | 0 | 7.2 | 5.58 | 22.87 | 20.83 | 4.3 | 1.49 | 3.58 |

- N-terminal amino-acid determination identified the spot as an uncharacterised protein of *F. prausnitzii*

Results *Bifidobacteria*:

We detected seroreactivity against several antigens of *bifidobacteria* in UC and CD patients, similar to the seroreactivity in healthy controls.



Conclusion:

No clear differences were found between UC patients, CD patients and healthy controls regarding seroreactivity against *Bifidobacteria* or *F. Prausnitzii*, except for one prominent spot of *F. Prausnitzii* that was detected in 75% of IBD patients.

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