

of the prior art, leads to less false positive and less false negative results, particularly in population-based approaches. A further problem underlying the present invention was to provide means for carrying out such methods and such assays, respectively. A still further problem underlying the present invention was the provision of a biomarker for *H. pylori* infected patients, whereby the biomarker preferably does not show any cross-reactivity with other bacteria and any proteins, peptides or nucleic acid molecules coding for such proteins and peptides in particular.

Summary

These and other problems underlying the present invention are solved by the subject matter of the attached independent claims. Preferred embodiments may be taken from the attached dependent claims. In one aspect, the present invention refers to a method for detecting *H. pylori* infection in a subject, wherein the method comprises detecting in a sample from the subject an immune response against FliD, wherein the immune response comprises an anti-FliD antibody, and wherein the method comprises reacting the sample with full-length FliD. In another aspect, the present invention refers to the use of a kit comprising full-length FliD and at least one further constituent, in a method of the present invention, wherein the at least one further constituent is selected from the group consisting of a buffer, a solid phase and an instruction leaflet. In yet another aspect, the present invention refers to a kit suitable for use in a method of the present invention, said kit comprising full-length FliD and at least one further constituent, wherein the at least one further constituent is selected from the group consisting of a buffer, a solid phase and an instruction leaflet.

Detailed description of the invention

These and other problems underlying the present invention are also solved by the following embodiments.

Embodiment 1: A method for detecting *Helicobacter* infection and more preferably an *H. pylori* infection in a subject, wherein the method comprises detecting in a sample from the subject an immune response against FliD.

Embodiment 2: The method of Embodiment 1, wherein if an immune response against FliD is detected in the sample from the subject, the subject is suffering from a *Helicobacter* infection, preferably an *H. pylori* infection, or the subject has undergone a *Helicobacter* infection, preferably an *H. pylori* infection, in the past.

Embodiment 3: The method of any one of Embodiments 1 to 2, wherein if no immune response against FliD is detected in the sample from the subject, the subject is not suffering from a *Helicobacter* infection, preferably an *H. pylori* infection.

Embodiment 4: The method of any one of Embodiments 1 to 2, wherein if no immune response against FliD is detected in the sample from the subject, the subject has undergone a *Helicobacter* infection, preferably an *H. pylori* infection, in the past.

Claims

1. A method for detecting *H. pylori* infection in a subject, wherein the method comprises detecting in a sample from the subject an immune response against FliD, wherein the immune response comprises an anti-FliD antibody, and wherein the method comprises reacting the sample with full-length FliD.
2. The method of claim 1, wherein the anti-FliD antibody is an IgG antibody and/or an IgA antibody.
3. The method of any one of claims 1 to 2, wherein the detection occurs by means of an ELISA, a lateral flow assay or a line assay.
4. The method of any one of claims 1 to 3, wherein the method further comprises detecting one or more antigens of *Helicobacter*, preferably of *H. pylori*, wherein the one or more antigens is/are selected from the group consisting of CagA, VacA, GroEL, Hp 0231, JHp 0940 and HtrA.
5. The method of any one of claims 1 to 4, wherein the sample is selected from the group consisting of blood serum, blood plasma, whole blood and stool.
6. Use of a kit comprising full-length FliD and at least one further constituent, in a method of any one of claims 1 to 5, wherein the at least one further constituent is selected from the group consisting of a buffer, a solid phase and an instruction leaflet.
7. A kit suitable for use in a method of any one of claims 1 to 5, said kit comprising full-length FliD and at least one further constituent, wherein the at least one further constituent is selected from the group consisting of a buffer, a solid phase and an instruction leaflet.