K961221

JUL 30 1996

Summary of Safety and Effectiveness Information
Pylori IgG ELISA Test Kit

I. Immuno Probe Inc.
1306 Bailes Lane, Suite F
Frederick, Maryland 21701
Contact person: William Boteler
Telephone: 301-695-7920
Date of preparation: March 28,1995

II. Description of Device

The Pylori IgG ELISA kit is an Enzyme-Linked Immunosorbent Assays (ELISA) for the qualitative determination of IgG antibodies in human serum to Helicobacter pylori antigen. The Wampole Pylori IgG ELISA assay may be used as an aid in the diagnosis of Helicobacter pylori infection in persons with gastrointestinal symptoms. **For In Vitro Diagnostic Use Only.**

The Pylori IgG ELISA test is an enzyme linked immunosorbent assay to detect IgG antibodies to Helicobacter pylori. Purified Helicobacter pylori antigen is attached to a solid phase microtiter well. Diluted test sera is added to each well. If the antibodies are present that recognize the antigen, they will bind to the antigen in the well. After incubation the wells are washed to remove unbound antibody. An enzyme labeled anti-human IgG is added to each well. If antibody is present it will bind to the antibody attached to the antigen on the well. After incubation the wells are washed to remove unbound conjugate. A substrate solution is added to each well. If enzyme is present the substrate will undergo a color change. After an incubation period the reaction is stopped and the color intensity is measured photometrically, producing an indirect measurement of specific antibody in the patient specimen.

III. Predicate Device

The Pylori IgG ELISA test is substantially equivalent to biopsy. Equivalence is demonstrated by the following comparative results:

Performance Characteristics

A. Evaluation of Pylori IgG ELISA Sensitivity and Specificity Relative to Biopsy

The Pylori IgG ELISA is a modification of Pylori Stat. Pylori Stat was originally evaluated by masked testing 386 serum from five geographically different areas, with biopsy with stain or culture results for *H. pylori*. The serum were from patients with random gender and various ages with the following clinical diagnosis: gastritis, gastric ulcer, duodenal ulcer, non-ulcer dyspepsia, esophagitis and normal. Table 1 illustrates the sensitivity and specificity of Pylori Stat to Biopsy.

Table 1
Pylori Stat IgG ELISA Sensitivity and Specificity

		Pylori Stat			
		+	eq	-	Total
Biopsy*	+	261	12	4	277
	-	2	2	105	109
	Total	263	14	109	386

Sensitivity = 261/265 = 98.5% 95% Confidence interval = 97.0% - 100%
Specificity = 105/107 = 98.1% 95% Confidence interval = 95.5% - 100%
Agreement = 366/372 = 98.4% 95% Confidence interval = 97.1% - 99.7%

* Culture or stain
Equivocals were not included in the above calculations.
The 95% confidence intervals were calculated using the normal method.

The Pylori IgG ELISA was evaluated by masked testing 371 serum from five geographically different areas, with biopsy with stain or culture results for *H. pylori*. The serum were from patients with random gender and various ages with the following clinical diagnosis: gastritis, gastric ulcer, duodenal ulcer, non-ulcer dyspepsia, esophagitis and normal. Table 2 illustrates the sensitivity and specificity of Pylori IgG ELISA to Biopsy.

Table 2

Pylori IgG ELISA Relative Sensitivity and Specificity

		Wampole Pylori IgG ELISA			
		+	**eq**	**-**	**Total**
Biopsy*	+	244	13	9	266
	-	4	2	99	105
	Total	248	15	108	371

Sensitivity = 244/253 = 96.4%	95% Confidence interval = 94.1% - 98.8 %
Specificity = 99/103 = 96.1%	95% Confidence interval = 92.3% - 99.9%
Agreement = 343/356 = 96.4%	95% Confidence interval = 94.4% - 98.3%

* Culture or stain positive
Equivocals were not included in the above calculations.
The 95% confidence intervals were calculated using the normal method.

B. Evaluation of Pylori IgG ELISA Precision

The precision of the Pylori IgG ELISA was determined by testing six different sera ten times each on three days. The mean coefficients of variation from the intra- and inter-assays are presented in Table 3

Table 3
Pylori IgG ELISA Precision

	Assay 1 (n=10)			Assay 2 (n=10)			Assay 3 (n=10)			InterAssay (n=30)		
	X	SD	CV	X	SD	CV	X	SD	CV	X	SD	CV
1	3.13	0.209	6.68%	3.05	0.145	4.75%	3.13	0.210	6.71%	3.10	0.188	6.06
2	2.08	0.151	7.26%	2.15	0.156	7.26%	2.01	0.127	6.32%	2.08	0.151	7.26
3	2.31	0.258	11.2%	2.29	0.115	5.02%	2.24	0.173	7.72%	2.28	0.187	8.20
4	1.17	0.184	15.7%	1.47	0.148	10.1%	1.30	0.179	13.8%	1.31	0.207	15.8
5	0.06	0.018	30.0%	0.12	0.014	11.7%	0.11	0.056	50.9%	0.08	0.031	38.8
6	0.10	0.016	16.0%	0.14	0.020	14.3%	0.10	0.067	67.0%	0.12	0.023	19.2

C. Evaluation of Pylori IgG ELISA with Potentially Cross Reactive Sera.

Pylori IgG ISR values were determined for paired sera from C. jujuni infections and single sera from C. fetus infections. The data in Table 4 shows no rise in antibody for C. jujuni paired sera, and negative responses for C. fetus infections indicating a lack of cross reactivity to these closely related organisms. Serum pairs 1, 3 and 4 demonstrate antibody to H. pylori. The pairs do not show as rise in antibody as would be expected in acute C. jujuni infection, therefore the response is considered to be specific for H. pylori with no cross reaction with C. jujuni. Sera positive for antibodies to Borrelia burgdorferi by ELISA and Western Blot were negative indicating a lack of cross reactivity.

Table 4
Pylori IgG Results with
Potentially Cross-reactive Sera

Serum #	Diagnosis*	Pylori IgG ISR
Acute 1	C. jejuni Diarrhea	2.30
Convalescent 1		2.41
Acute 2	C. jejuni Diarrhea	2.11
Convalescent 2		2.23
Acute 3	C. jejuni Diarrhea	1.23
Convalescent 3		1.20
Acute 4	C. jejuni Diarrhea	0.40
Convalescent 4		0.57
Acute 5	C. jejuni Diarrhea	0.88
Convalescent 5		0.89
6	C. fetus Endocarditis	0.59
7	C. fetus Endocarditis	0.63
8	C. fetus Endocarditis	0.72
9	C. fetus Bacteremia	0.38

*All cases diagnosed by culture; C. jejuni infection by fecal culture on Camplylobacter-specific media, C. fetus infection by blood culture.

10.	Borrelia burgdorferi	0.44
11.	Borrelia burgdorferi	0.20
12.	Borrelia burgdorferi	0.22
13.	Borrelia burgdorferi	0.89
14.	Borrelia burgdorferi	0.11

15.	Borrelia burgdorferi	0.20
16.	Borrelia burgdorferi	0.16
17.	Borrelia burgdorferi	0.59
18.	Borrelia burgdorferi	0.09
19.	Borrelia burgdorferi	0.13

All Borrelia burgdorferi sera were positive for antibodies by ELISA and Western Blot. Their clinical histories were suggestive of Lyme Disease.