Antibody Products for Detection of *Cryptosporidium* by Immunofluorescence*

Part A: Products Used Primarily for Environmental Samples

Product Name, Distributor	Product Description	Manufacturer's Designated Usage	Species of *Cryptosporidium* Detected (+/-) NT= not tested	Genera & Species Showing No Cross Reactivity	Reference
Anti-*Cryptosporidium* Antibody Biovir Laboratories, Inc. 685 Stone Road Benicia, CA 94510 Phone: 800-442-7342	Direct IFA, Mono-clonal, mouse IgM Conjugate: FITC, others on request, Counterstain: None	Environmental Samples	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (+) *C. meleagridis* (NT) *C. baileyi* (+) *C. serpentis* (NT)	Work in Progress	None
Hydrofluor™ Combo EnSys Inc.[a] PO Box 14063 Research Triangle Park, NC 27709 Phone: 919-941-5509	Indirect IFA Kit. Primary: Monoclonal mouse IgM Secondary: Goat anti-mouse IgM (with BSA) Conjugate: FITC Counterstain: None	Environmental Samples	*C. parvum* (+) *C. wrairi* (+) *C. muris* (+) *C. meleagridis* (+) *C. baileyi* (-) *C. serpentis* (+) *C.* sp. (lizard) (+) *C.* sp. (turtle) (+)	**Protozoa:** *Entamoeba coli, Ent. histolytica, Ent. hartmanii, Endolimax nana, Iodamoeba butschlii, Giardia lamblia, Chilomastix mesnili, Dientamoeba fragilis, Trichomonas hominis, Balantidium coli, Blastocystis hominis, Isospora belli.* **Helminth eggs and larvae:** *Ascaris lumbricoides, Trichuris trichiura,* Hookworm, *Strongyloides stercoralis, Taenia* sp., *Hymenolepis nana, Hymenolepis diminuta, Diphyllobothrium latum, Clonorchis sinensis, Paragonimus westermani, Fasciola/ Fasciolopsis, Sch. mansoni.* **Bacteria:** *Shigella flexneri, Salmonella* Groups B and D, *Campylobacter jejuni, Mycobacterium avium, M. intracellulare.* **Yeast and yeast-like fungi:** *Candida albicans, C. guilliermondii, C. tropicalis, C. krusei, C. pseudotropicalis, C. parapsilosis, C. (Torulopsis) glabrata, Cryptococcus neoformans, C. laurentii, Saccharomyces cerevisiae, Geotrichum* sp., *Trichosporon cutaneum, Rhodotorularubra*	2,4,7,8,10

Product Name, Distributor	Product Description	Manufacturer's Designated Usage	Species of *Cryptosporidium* Detected (+/-) NT= not tested	Genera & Species Showing No Cross Reactivity	Reference
Detect IF *Cryptosporidium* Shield Diagnostics, Ltd. The Technology Park Dundee DD1 1 SW Scotland, Great Britain Phone: 44-1382-561000	Direct IFA Monoclonal, mouse IgM Conjugate: FITC Counterstain: Evans Blue	Environmental samples, feces. May be used for clinical diagnosis. U.S. availability for research only.	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (+) *C. meleagridis* (+) *C. baileyi* (+) *C. serpentis* (+)	*Eimeria tenella* *Toxoplasma gondii*	9
Cryptocel-Cel IF Test Tech Lab[b] 1861 Pratt Drive Blacksburg, VA 24060 Phone: 540-231-3943 FAX: 540-231-3942	Direct IFA Kit. Monoclonal, mouse IgM Conjugate: FITC Counterstain: With or without Evans Blue	Research and environmental use only. Acetone fixed fecal smears air-dried from 10% formalin fixed stools or water	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (+) *C. meleagridis* (NT) *C. baileyi* (+) *C. serpentis* (NT)	*Blastocystis hominis, Entamoeba hartmanni, Ent. histolytica, Endolimax nana, Giardia intestinalis, Strongyloides stercoralis, Trichuris trichiura, Escherichia coli, Candida* sp.,*Streptococcus faecalis*	14
Crypt-A-Glo, Aqua Glo, Multi Glo Waterborne, Inc. 6047 Hurst Street New Orleans, LA 70118-6129 Phone/FAX: 504-895-3338	Monoclonal, mouse IgM, clone 2-C9 available as direct or indirect IFA. Eleven products for water testing available. Conjugate: FITC, Texas Red, Biotin, phycoerythrin, or combinations, or not conjugated. Counterstain: None	Water testing	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (+ weaker) *C. meleagridis* (NT) *C. baileyi* (+ weaker) *C. serpentis* (NT)	*Giardia lamblia* *Giardia muris* *Giardia microti* *Entamoeba hystolytica* *Entamoeba coli* *Blastocystis hominis* *Septata intestinalis* (Helminths, bacteria, yeasts, algae: none specifically tested but no reported reactions.)	None

Part B: Products Primarily Used for Clinical Samples

Product Name, Distributor	Product Description	Manufacturer's Designated Usage	Species of *Cryptosporidium* Detected (+/-) NT= not tested	Genera & Species Showing No Cross Reactivity	Reference
Clone BEL 0126 BioGenesis[c] 104 Little Mill Road Sandown, NH 03873 Phone: 603-887-4600 FAX: 603-887-4800	Monoclonal, mouse IgG, 3-kappa Titer: IF>1/100 ELISA>1/2000 Recognizes specific membrane antigen, protein A purified, in PBS without preservatives	Human and bovine feces by IF or ELISA. For *in vitro* research and manufacturing use only	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (NT) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	Not known	6
Clone 2G1 BioGenesis (As above)	Monoclonal, mouse IgM, Ig fraction by selective precipitation, in PBS pH 7.2 without preservatives, Titer: To be established in end user assay system. Recognizes unknown antigen present on 17/27 human fecal oocyst preparations tested. In combination with Clone 3E8 recognized 27/27 preps tested	Human and bovine feces. Smears air dried and fixed in 3% methanol. For *in vitro* research and manufacturing use only	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (NT) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	Not known	None

Product Name, Distributor	Product Description	Manufacturer's Designated Usage	Species of *Cryptosporidium* Detected (+/-) NT= not tested	Genera & Species Showing No Cross Reactivity	Reference
Clone 3E8 BioGenesis (As above)	Monoclonal, mouse IgM (see Clone 2G1), recognizes unknown antigen present on 23/27 human fecal oocyst preparations tested. In combination with Clone 2G1 or Clone 4H5, recognizes 27/27 preparations tested	Human and bovine feces. For *in vitro* research and manufacgturing use only	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (NT) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	Not known	None
Clone 4H5 BioGenesis (As above)	Monoclonal, mouse IgA (see Clone 2G1), recognizes unknown antigen present on 16/27 human fecal oocyst preparations tested. In combination with Clone 3E8 recognizes 27/27 preparations tested	Human and bovine feces. For *in vitro* research and manufacturing use only	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (NT) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	Not known	None
Anti-*Cryptosporidium* Antibody Chemicon 28835 Single Oak Dr. Tennecula, CA 92590 Phone: 800-437-7500 FAX: 909-676-9209	Monoclonal, mouse IgM, ascites fluid, not conjugated Recognizes 40 Kda antigen on *C.parvum* oocyst and binds to exterior. Does not bind to sporozoites	Not for use as a diagnostic. For research use only. ELISA, IF and western blotting	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (+) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	*Eimeria aubernensis, E. bovis, E. ellipsoidalis, E. zuernii*	1

Product Name, Distributor	Product Description	Manufacturer's Designated Usage	Species of *Cryptosporidium* Detected (+/-) NT= not tested	Genera & Species Showing No Cross Reactivity	Reference
Merifluor™ *Crypto-sporidium/Giardia* Meridian Diagnostics,Inc. 3471 River Hills Dr. Cincinnati, OH 45244 Phone: 513-271-3700	Monoclonal, mouse IgG, direct IFA kit Conjugate: FITC Counterstain: eriochrome black	Clinical fecal specimens, unfixed or fixed in 10% formalin or PVA	*C. parvum* (+) *C. wrairi* (+) *C. muris* (+) *C. meleagridis* (+) *C. baileyi* (-) *C. serpentis* (+) *C.* sp. (lizard) (+) *C.* sp. (turtle) (+)	Same as Hydrofluor™Combo above	2,5,7,11,12, 15
Hyperimmune Anti-*Cryptosporidium* Bovine Colostrum NIH AIDS Research & Reference Reagent Program[d] Ogden Bioservices Corp. 685 Lofstrand Lane Rockville, MD 20850 Phone: 301-340-0245 FAX: 301-340-9245 email: obcaids@lx.netcom.com	Polyclonal, bovine hyperimmune colostrum. Irradiated, high titer, from last milking of a 2-day period	For researchers registered with the program this reagent is a government service and the reagent is free of charge	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (NT) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	Not known	3,13
Anti-*Cryptosporidium* Antibody VMRD Inc. PO Box 502 NW 115 State Street Pullman, WA 99163 Phone: 800-222-8673 FAX: 509-332-5356	Monoclonal, mouse IgM Conjugate: FITC or not conjugated	Not specified	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (NT) *C. meleagridis* (NT) *C. baileyi* (NT) *C. serpentis* (NT)	*Eimeria aubernensis, E. bovis, E. ellipsoidalis, E. zuernii*	1

Product Name, Distributor	Product Description	Manufacturer's Designated Usage	Species of *Cryptosporidium* Detected (+/-) NT= not tested	Genera & Species Showing No Cross Reactivity	Reference
Crypt-A-Glo Waterborne, Inc. (As above)	Same as above, but direct; Conjugate: FITC Counterstain: None	Clinical diagnosis of oocysts in stools	*C. parvum* (+) *C. wrairi* (NT) *C. muris* (+ weaker) *C. meleagridis* (NT) *C. baileyi* (+ weaker) *C. serpentis* (NT)	*Giardia lamblia* *Giardia muris* *Giardia microti* *Entamoeba hystolytica* *Entamoeba coli* *Blastocystis hominis* *Septata intestinalis* (Helminths, bacteria, yeasts, algae: none specifically tested but no reported reactions.)	None

*This table was originally drafted by Lynne Anguish, Cornell Univ. Information contained in the table was current as of January, 1996. Uniformity of testing for antibody reactivity should not be assumed. No standard protocols are known to be available for testing the reactivity of oocysts with antibodies. Consequently, procedures used in the references cited in this table for determining reactivity most likely varied among laboratories.

[a]Manufactured by Meridian Diagnostics, Inc., 3471 River Hills Dr., Cincinnati, OH, Phone: 513-271-3700. Positive reactions that may be lessened by using goat serum as a blocking agent have been reported for this antibody when used with some algae (see Reference 10). There are also anecdotal reports of positive reactions of this antibody with unidentified yeasts.

[b]Manufactured by Cellabs Pty. Ltd., Unit 7-27 Dale Street. PO Box 421, Brookvale, NSW 2100 Australia, Phone: 02-905-0133, FAX: 02-905-6426

[c]Manufactured by BioGenesis, Ltd., New Fields, Stinsford Road, Poole, England BH17 0N, Phone: (0202) 660006, FAX: (0202) 660020

[d]Provided by Dr. Beth L.P. Ungar

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