Part of BB Solutions

## Yersinia enterocolitica Antigens

*Y. enterocolitica* isolates have been identified as the causative agent of yersiniosis, which is considered an important foodborne gastrointestinal (GI) infection in humans. *Y. enterocolitica* infects M-cells in the Peyer's patches. Subsequent contagion of the underlying lamina propria, which is part of the mucosa lining the GI-tract, leads to destruction of the intestinal epithelial cells. Depending on the patient, various symptoms ranging from acute enteritis with diarrhea, fever or nausea have been reported to be associated with acute yersiniosis. Besides its ability to infect intestinal cells, *Y. enterocolitica* is able to spread from the lamina propria to infect other organs and cause sequelae, which may follow acute infection within several weeks. In1969, Ahvonen *et al.* reported reactive arthritis (ReA), known as Reiter's disease, as such a sequela. ReA describes inflammation in joints and other tissues.

Key virulence factor of pathogenic *Y. enterocolitica* strains is a plasmid-encoded type III secretion system, through which *Yersinia* outer proteins (Yops) and other effectors are injected into the host cell to interfere with its phagocytic activity. YopB, YopD, and LcrV (low calcium response V antigen) serve as adapter proteins and are involved in the pore-formation. Yop E, a GTPase activation protein, is one of the translocation regulators and is also implicated in controlling pore formation.

Ye (0:9) YopE		Ye (0:9) YopB		Ye (0:9) YopE		Ye (0:9) YopB
Ye (0:9) YopM	000000	Ye (0:9) YopN		Ye (0:9) YopM	0.0.0.0.0.0.0.	Ye (0:9) YopN
Ye (0:9) YopD		Ye (0:9) YopH	lgG analysis	Ye (0:9) YopD		Ye (0:9) YopH
Ye (0:8) YopM	0000000	Ye (0:9) LcrV		Ye (0:8) YopM	000	Ye (0:9) LcrV
Serum control		Neg. control		Serum control		Neg. control
Ye (0:9) YopE	0 1 0 0 0 0	Ye (0:9) YopB		Ye (0:9) YopE	1 4 1 2 4 5	Ye (0:9) YopB
Ye (0:9) YopM		Ye (0:9) YopN		Ye (0:9) YopM		Ye (0:9) YopN
Ye (0:9) YopD	000	Ye (0:9) YopH	IgM analysis	Ye (0:9) YopD	201 1 10 33	Ye (0:9) YopH
Ye (0:8) YopM		Ye (0:9) LcrV		Ye (0:8) YopM		Ye (0:9) LcrV
Serum control	000	Neg. control		Serum control	0.00	Neg. control
Ye (0:9) YopE		Ye (0:9) YopB		Ye (0:9) YopE		Ye (0:9) YopB
Ye (0:9) YopM		Ye (0:9) YopN		Ye (0:9) YopM		Ye (0:9) YopN
Ye (0:9) YopD		Ye (0:9) YopH	IgA analysis	Ye (0:9) YopD		Ye (0:9) YopH
Ye (0:8) YopM	000	Ye (0:9) LcrV		Ye (0:8) YopM		Ye (0:9) LcrV
Serum control	000	Neg. control		Serum control	000	Neg. control

Figure: Immunodot analyses of sera from two patients infected with Yersinia enterocolitica. The presence of IgG (top panel), IgM (middle panel), and IgA (lower panel) antibodies were determined using antigens from Y. enterocolitica serogroups O:8 and O:9.

Ordering Information					
43000 43001	Yersinia enterocolitica (O:8) YopM	0.1 mg 1.0 mg	effector whose identifie		
43100 43101	Yersinia enterocolitica (O:9) LcrV	0.1 mg 1.0 mg	tyrosine signalin		
43200 43201	Yersinia enterocolitica (O:9) YopB	0.1 mg 1.0 mg	<i>Y. enter</i> baculov		
43300 43301	Yersinia enterocolitica (O:9) YopD	0.1 mg 1.0 mg	Referenc		
43700 43701	Yersinia enterocolitica (O:9) YopE	0.1 mg 1.0 mg	Ahvonen Bottone Dewoody		
43400 43401	Yersinia enterocolitica (O:9) YopH	0.1 mg 1.0 mg	Galindo e Leirisalo- Rosner e		
43500 43501	Yersinia enterocolitica (O:9) YopM	0.1 mg 1.0 mg	Townes ( Tuumine		
43600 43601	Yersinia enterocolitica (O:9) YopN	0.1 mg 1.0 mg	In some protected these issu		

YopN has been identified as regulator for timely injection of effector proteins. YopM and YopH are two of the effectors, whose injection is regulated by YopN. While YopM has been identified to activate ribosomal S6 kinase, YopH acts as a tyrosine phosphatase that interferes with the host's cellular signaling cascades.

*Y. enterocolitica* antigens are produced in either *E. coli* or the baculovirus/insect cell expression system.

References: Ahvonen *et al.* (1969) Acta Rheumatol Scand. 15 (3): 232-253 Bottone (1997) Clin Microbiol Rev. 10 (2): 257-276 Dewoody *et al.* (2013) Front Cell Infect Microbiol. 3: 4 Galindo *et al.* (2011) J Pathog. 2011: 182051 Leirisalo-Repo (2005) Scand J Rheumatol. 34 (4): 251-259 Rosner *et al.* (2010) BMC Public Health. 10: 337 Townes (2010) Clin Infect Dis. 50 (2): 247-254 Tuuminen *et al.* (2013) Front Immunol. 4: 418

In some countries the use of certain antigens in diagnostic tests may be protected by patents. DIARECT is not responsible for the determination of these issues and suggests clarification prior to use.

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