HKBF

Pasteurized Bacteroides fragilis; TLR2 ligand

Catalog code: tlrl-hkbf

https://www.invivogen.com/hkbf

For research use only

Version 19A04-MM

PRODUCT INFORMATION

Contents

• 10^9 freeze-dried cells of pasteurized nontoxigenic *Bacteroides fragilis* (HKBF)

Note: Product was pasteurized by heating to 95 °C.

• 1.5 ml endotoxin-free water

Storage and stability

- HKBF is shipped at room temperature and should be stored at 4 °C.
- Store resuspended HKBF at -20 °C.

Quality Control:

- TLR2 activity has been validated using HEK-Blue™ TLR2 cells.
- The absence of TLR4 activity has been confirmed using HEK-Blue™ TLR4 cells.
- Lack of viability has been confirmed by microbiological testing.

DESCRIPTION

HKBF is a pasteurized preparation of nontoxigenic *Bacteroides fragilis* (NTBF), a bile-resistant, Gram-negative, obligate anaerobe present in normal intestinal microbiota. When retained within the gut it functions as a health-promoting symbiont, however, outside of the gut it can cause significant pathology, including abscess formation and bacteremia[1]. Recent research has focused on its role in immunity and inflammation[2]. Indeed, the presence of *B. fragilis* exerts a protective effect in animal models of colitis[2]. Specifically, it is believed that the capsular polysaccharide A (PSA) of *B. fragilis* directly acts on regulatory T cells (Tregs) and also induces anti-inflammatory cytokine production primarily in a TLR2-dependent manner[2-5]. Interestingly, a reduced presence of *B. fragilis* in the intestinal microbiota has been linked with obesity[2].

1. Wexler H., 2007. Bacteroides: the Good, the Bad, and the Nitty-Gritty. Clin Microbiol Rev. 20(4):593-621. **2. Round JL. & Mazmanian SK., 2009.** The gut microbiota shapes intestinal immune responses during health and disease. Nat Rev Immunol. 9(5):313-23. **3. Jiang F. *et al.*, 2017.** The symbiotic bacterial surface factor polysaccharide A on Bacteroides fragilis inhibits IL-1β-induced inflammation in human fetal enterocytes via toll receptors 2 and 4. PLoS One. 12(3):e0172738. **4. Round JL. *et al.*, 2011.** The Toll-like receptor 2 pathway establishes colonization by a commensal of the human microbiota. Science, 332:974-977. **5. Alhawi M. *et al.*, 2009.** Bacteroides fragilis signals through Toll-like receptor (TLR) 2 and not through TLR4. J Med Microbiol. 58(8):1015-22.

METHODS

Preparation of stock suspension (10^9 cells/ml)

- Add 1 ml of endotoxin-free water (provided) to rehydrate the pellet.
- Vortex 10 sec to homogenize.

Note: Resuspended HKBF results in a cloudy suspension.

Working concentration: 10^6-10^7 cells/ml

HKBF-induced TLR2 activation

HKBF can be used to stimulate TLR2 in HEK-Blue™ TLR2 cells. HEK-Blue™ TLR2 cells stably express the TLR2 gene and an NF-κB-inducible secreted embryonic alkaline phosphatase (SEAP).
For more information visit: http://www.invivogen.com/hek-blue-tlr

- Add 20 µl of HKBF at 10^6-10^7 cells/ml (final concentration) in a well of a 96-well plate.
- Add 180 µl of cell suspension (prepare cell suspension according to data sheet) per well.
- Incubate the plate for 6-24 h at 37 °C, 5% CO_2.
- Determine TLR2 stimulation with HKBF by assessing cytokine expression using an ELISA, or SEAP expression using a SEAP detection medium, such as HEK-Blue™ Detection.

RELATED PRODUCTS

Product	Catalog Code
HEK-Blue™ hTLR2 Cells (human TLR2)	hkb-htlr2
HEK-Blue™ mTLR2 Cells (mouse TLR2)	hkb-mtlr2
HEK-Blue™ Detection	hb-det2
Other TLR2 ligands:	
HKEB (heat-killed *E. coli* 0111:B4)	tlrl-hkeb2
HKLM (heat-killed *L. monocytogenes*)	tlrl-hklm
HKPG (heat-killed *P. gingivalis*)	tlrl-hkpg

TECHNICAL SUPPORT
InvivoGen USA (Toll-Free): 888-457-5873
InvivoGen USA (International): +1 (858) 457-5873
InvivoGen Europe: +33 (0) 5-62-71-69-39
InvivoGen Hong Kong: +852 3622-3480
E-mail: info@invivogen.com