

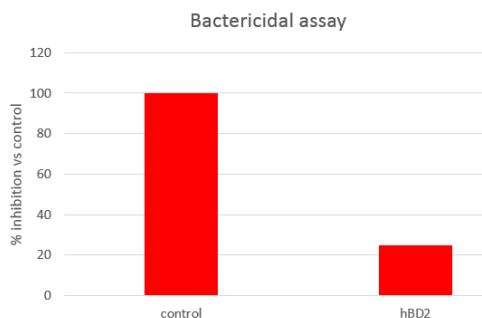
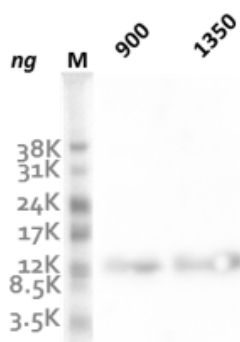
**CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET**

<b>Product name</b>	Beta-defensin 2, Human, Peptide		
<b>Catalog number</b>	HC2140		
<b>Lot number</b>	-	<b>Expiry date</b>	-
<b>Volume</b>	0.5 ml	<b>Activity</b>	N.A.
<b>Formulation</b>	PBS	<b>Amount</b>	50 µg
<b>Host species</b>	N.A.	<b>Concentration</b>	100 µg/ml
<b>Endotoxin level</b>	<24 EU/mg	<b>Purification</b>	N.A.
<b>Storage</b>	-20°C	<b>Purity</b>	> 95%

**Application notes**

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #								
Yes					•			•
No								
N.D.	•	•	•	•		•	•	

N.D.= Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot



W: Western blot experiment with HC2140 (900 and 1350 ng) detected by HP9057 (2 µg/ml).

FS: BD-2 inhibits growth of E.coli strain DH5α by 75% compared to the control.

Dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions.

- W: A reduced sample treatment and SDS-Page was used. The band size is ~12 kDa.
- FS: Complement activation after incubation with CVF is tested by the lysis of sheep red blood cells.

**General Information**
**Description**

Antimicrobial proteins (AMP) are a fundamental element of the primary response against pathogens. AMP's are small endogenous cationic molecules expressed by phagocytic and epithelial cells. The antimicrobial activity of AMP's is directed towards a broad spectrum of pathogens, like Gram-positive and -negative bacteria, viruses, yeast and fungi. AMP's aid in innate immunity and adaptive immunity via direct inactivation and by immunomodulatory activity like leukocyte migration. Defensins are the most prominent mammalian AMP's. Three defensin peptide families are identified, the α-, β-, and θ-defensins. They are characterized by a triple-stranded β-hairpin structure, six disulfide-linked cysteine residues and a positive charge. They are synthesized as preproteins and undergo processing to become a fully active peptide. Defensins are divided in alpha- and beta-defensins depending on their disulfide bridging pattern. Human beta-defensin-2 (hBD-2) is a cystein-rich cationic 41 amino acid antimicrobial peptide of 4-5 kDa. hBDs are localized in epithelial surfaces. Originally, hBD2 was identified in psoriatic scales. Nowadays, hBD-2 has been described as a dynamic component of the local epithelial defense system of the skin, intestinal and respiratory tract, where it functions by protecting surfaces from infection. The hBD2 gene is flanked by several binding sites of NF-κB. Its expression is inducible by proinflammatory molecules like TNFα, IL1α, diverse panel of bacteria, yeasts, IL22 and most of all by IL-17. hBD2 functions best under low ionic strength conditions and is weakened at high salt concentrations. hBD is capable of forming dimers and its microbial activity derives from the mechanism to permeabilize

the anionic lipid bilayer, to form pores and the subsequent release of cellular content. HC2140 is a synthetic peptide and has the following sequence: H-GIGDPVTCLKSGAICHPVFCPRRYKQIGTCGLPGTKCCKKP-OH.

**Aliases** HBD2

**Storage&stability** Product should be stored at -20°C. Store stock solution in aliquots at -20°C. Repeated freeze and thaw cycles will cause loss of activity. Under recommended storage conditions, product is stable for at least one year.

**Precautions** For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

---

We hereby certify that the above-stated information is correct and that this product has been successfully tested by the Quality Control Department. This product was released for sale according to the existing specifications. This document has been produced electronically and is valid without a signature.

Approved by Manager of QC  
Robbert Zwinkels

Date  
29/06/2018

Do you have any questions or comments regarding this product? Please contact us via [support@hycultbiotech.com](mailto:support@hycultbiotech.com).