# **Product data sheet**



MedKoo Cat#: 530640				
Name: BAR-502				
CAS#: 1612191-86-2				
Chemical Formula: C <sub>25</sub> H <sub>44</sub> O <sub>3</sub>				
Exact Mass: 392.3290				
Molecular Weight: 392.63				
Product supplied as:	Powder			
Purity (by HPLC):	≥98%			
Shipping conditions	Ambient temperature			
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.			
-	In solvent: -80°C 3 months; -20°C 2 weeks.			



## 1. Product description:

BAR502 is a dual FXR and GPBAR1 agonist. BAR-502 promotes browning of white adipose tissue and reverses liver steatosis and fibrosis. BAR502 protects against liver damage caused by HFD by promoting the browning of adipose tissue.

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

#### 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM		
DMSO	35.0	89.14		
Ethanol	51.0	129.89		

#### 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.55 mL	12.73 mL	25.47 mL
5 mM	0.51 mL	2.55 mL	5.09 mL
10 mM	0.25 mL	1.27 mL	2.55 mL
50 mM	0.05 mL	0.25 mL	0.51 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

## 6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

TBD

## In vivo study

1. Carino A, Cipriani S, Marchianò S, Biagioli M, Santorelli C, Donini A, Zampella A, Monti MC, Fiorucci S. BAR502, a dual FXR and GPBAR1 agonist, promotes browning of white adipose tissue and reverses liver steatosis and fibrosis. Sci Rep. 2017 Feb 16;7:42801. doi: 10.1038/srep42801. PMID: 28202906; PMCID: PMC5311892.

2. Carino A, Marchianò S, Biagioli M, Fiorucci C, Zampella A, Monti MC, Morretta E, Bordoni M, Di Giorgio C, Roselli R, Ricci P, Distrutti E, Fiorucci S. Transcriptome Analysis of Dual FXR and GPBAR1 Agonism in Rodent Model of NASH Reveals Modulation of Lipid Droplets Formation. Nutrients. 2019 May 21;11(5):1132. doi: 10.3390/nu11051132. PMID: 31117231; PMCID: PMC6567134.

## 7. Bioactivity

Biological target: BAR502 is a dual FXR and GPBAR1 agonist with IC50 values of 2 µM and 0.4 µM, respectively.

In vitro activity

TBD

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#### In vivo activity

Whether BAR502, a non-bile acid, steroidal dual ligand for FXR and GPBAR1, reverses steato-hepatitis in mice fed a high fat diet (HFD) and fructose was investigated. After 9 week, mice on HFD gained  $\approx 30\%$  of b.w (P < 0.01 versus naïve) and were insulin resistant. These overweighting and insulin resistant mice were randomized to receive HFD or HFD in combination with BAR502. After 18 weeks, HFD mice developed NASH like features with severe steato-hepatitis and fibrosis, increased hepatic content of triacylglycerol and cholesterol and expression of SREPB1c, FAS, ApoC2, PPAR  $\alpha$  and  $\gamma$ ,  $\alpha$  -SMA,  $\alpha$  1 collagen and MCP1 mRNAs. Treatment with BAR502 caused a  $\approx 10\%$  reduction of b.w., increased insulin sensitivity and circulating levels of HDL, while reduced steatosis, inflammatory and fibrosis scores and liver expression of SREPB1c, FAS, PPAR $\gamma$ , CD36 and CYP7A1 mRNA. BAR502 increased the expression of SHP and ABCG5 in the liver and SHP, FGF15 and GLP1 in intestine. BAR502 promoted the browning of epWAT and reduced liver fibrosis induced by CCl4. In summary, BAR502, a dual FXR and GPBAR1 agonist, protects against liver damage caused by HFD by promoting the browning of adipose tissue.

Reference: Sci Rep. 2017 Feb 16;7:42801. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5311892/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.