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# BTG2 shRNA (h) Lentiviral Particles: sc-43645-V

## BACKGROUND

B cell translocation gene proteins, also designated BTG1–4, are members of a novel anti-proliferative gene family and play a role in transcription regulation. BTG genes are considered immediate early genes whose expression is induced in response to mitogenic as well as differentiative and antiproliferative factors. Expression of BTG1 is maximal in the G<sub>0</sub>/G<sub>1</sub> phases of the cell cycle and is downregulated when cells progress through G<sub>1</sub>. BTG2 is a p53 inducible, anti-proliferative protein that regulates the G<sub>1</sub>/S transition of the cell cycle. BTG2 expression increases in response to DNA damage, cell differentiation, cell quiescence, cell contact and as part of a positive feedback mechanism in response to growth stimulation. High levels of BTG2 are present in kidney proximal tubules, lung alveolar bronchial epithelium, and the basal cell layer of prostate acini. BTG1 and BTG2 both contain LXXLL motifs, referred to as nuclear receptor boxes, which are involved in the regulation of ER-mediated activation. Human BTG3 protein is abundantly expressed in testis, prostate, ovary, thymus and lung.

## REFERENCES

1. Rouault, J.P., et al. 1992. BTG1, a member of a new family of antiproliferative genes. *EMBO J.* 11: 1663-1670.
2. Rouault, J.P., et al. 1996. Identification of BTG2, an antiproliferative p53-dependent component of the DNA damage cellular response pathway. *Nat. Genet.* 14: 482-486.

## CHROMOSOMAL LOCATION

Genetic locus: BTG2 (human) mapping to 1q32.1.

## PRODUCT

BTG2 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing 1.0 x 10<sup>6</sup> infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see BTG2 siRNA (h): sc-43645 and BTG2 shRNA Plasmid (h): sc-43645-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

## APPLICATIONS

BTG2 shRNA (h) Lentiviral Particles is recommended for the inhibition of BTG2 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing 1.0 x 10<sup>6</sup> infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

BTG2 (H-50): sc-33775 is recommended as a control antibody for monitoring of BTG2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BTG2 gene expression knockdown using RT-PCR Primer: BTG2 (h)-PR: sc-43645-PR (20  $\mu$ l, 536 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Chiang, K.C., et al. 2014. Cisplatin modulates B-cell translocation gene 2 to attenuate cell proliferation of prostate carcinoma cells in both p53-dependent and p53-independent pathways. *Sci. Rep.* 4: 5511.
2. Lee, J.C., et al. 2015. Upregulation of B-cell translocation gene 2 by epigallocatechin-3-gallate via p38 and ERK signaling blocks cell proliferation in human oral squamous cell carcinoma cells. *Cancer Lett.* 360: 310-318.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.