SANTA CRUZ BIOTECHNOLOGY, INC.

# copGFP Control Plasmid: sc-108083

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Santa Cruz Biotechnology, Inc. currently offers more than 49,000 target specific shRNA plasmids that encode 19-25 nucleotide (plus hairpin) shRNAs designed to knock down a wide variety of proteins. For each shRNA plasmid DNA product, we offer an appropriate control antibody for confirmation of targeted mRNA silencing by Western Blotting or immunofluorescence. We also offer non-targeted Control shRNA Plasmids. In addition, we offer the copGFP Control Plasmid, which contains the full-length copGFP gene with optimized human codons for high level expression of the fluorescent protein from the CMV promoter in mammalian cells. The copGFP marker is a novel natural green monomeric GFP-like protein from copepod (*Pontellina* sp.). The copGFP protein is a non-toxic, non-aggregating protein with fast protein maturation. Highly stable at a wide range of pH (pH 4-12), the copGFP protein does not require any additional cofactors or substrates. The copGFP protein has very bright fluorescence that exceeds at least 1.3 times the brightness of EGFP, the widely used *Aequorea victoria* GFP mutant. The copGFP protein emits green fluorescence with the following characteristics:

Maximum emission wavelength: 502 nm
Maximum excitation wavelength: 482 nm
Quantum yield: 0.6
Extinction coefficient: 70,000 M-1 cm-1

Due to its exceptional properties, copGFP is an excellent fluorescent marker that can be used to monitor delivery of shRNA lentiviral constructs into cells.

## PRODUCT

copGFP Control Plasmid is a lentiviral vector plasmid that encodes the copGFP fluorescent protein in mammalian cells. copGFP Control Plasmid is provided as transfection-ready purified plasmid DNA. Each vial contains 20 µg lyophilized shRNA plasmid DNA sufficient for up to 20 transfections when resuspended as directed below. Also see copGFP Control Lentiviral Particles: sc-108084 as an alternate control for use in transduction-based experiments.

## STORAGE AND RESUSPENSION

Store lyophilized copGFP Control at 4° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4° C for short term storage or -20° C for long term storage. Avoid repeated freeze thaw cycles.

Resuspend lyophilized copGFP Control in 200 µl of the deionized water provided. Resuspension of copGFP Control in 200 µl of deionized water makes a 0.1 µg/µl solution in a 10 mM Tris, 1 mM EDTA buffered solution.

## 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

copGFP Control Plasmid is recommended for use as a control to monitor and optimize transfection efficiency, thus assuring satisfactory levels of targeted shRNA-knockdown. After transfection, cells stably expressing copGFP may be isolated via puromycin selection.

## SUPPORT REAGENTS

| PRODUCT | CAT. # | DESCRIPTION | AMOUNT |
|---|---|---|---|
| shRNA Plasmid Transfection Reagent | sc-108061 | Delivers shRNA Plasmid DNA into cells with minimal cell toxicity; enables highly efficient shRNA Plasmid DNA transfection in a variety of cell lines including CHO-K1, COS, LNCaP, NIH/3T3, 293, T24, C2C12, SF-9, primary human keratiocytes, primary aortic smoothmuscle, primary rabbit myoblasts, human bone marrow endothelial cells (HBMEC). | 0.2 ml 50-100 transfections |
| shRNA Plasmid Transfection Medium | sc-108062 | Reduced-serum medium suitable for addition to shRNA suspension and shRNA Transfection Reagent immediately prior to cell transfection; modification of Eagle's Minimal Essential Medium, buffered with HEPES and sodium bicarbonate, and supplemented with hypoxanthine, thymidine, sodium pyruvate, L-glutamine, trace elements, growth factors and phenol red. | 20 ml |
| Control shRNA Plasmid-A | sc-108060 | Control shRNA Plasmid-A is a negative control for experi ments using targeted shRNA transfection which encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. | 20 µg 20 transfections |
| Control shRNA Plasmid-B | sc-108065 | Control shRNA Plasmid-B is available as an alternate negative scrambled shRNA sequence control. | 20 µg 20 transfections |
| Control shRNA Plasmid-C | sc-108066 | Control shRNA Plasmid-C is available as an alternate negative scrambled shRNA sequence control. | 20 µg 20 transfections |

shRNA Plasmid support reagents are optimal for successful delivery of Santa Cruz Biotechnology, Inc.'s shRNA Gene Silencing Plasmids into mammalian cells. Amounts listed above are based on use of 6-well plates.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.