

FICZ

AhR agonist

Catalog code: tlrl-ficz

<https://www.invivogen.com/ficz>

For research use only

Version 23A17-MM

PRODUCT INFORMATION

Contents

- 1 mg FICZ

Storage and stability

- FICZ is shipped at room temperature. Upon receipt, store at -20°C.
- Upon resuspension of FICZ, prepare aliquots and store at -20°C. Resuspended product is stable for 1 month when aliquoted and properly stored. Avoid repeated freeze-thaw cycles.
- We recommend to protect this product from light.

Quality control

- Purity ≥ 95% (UHPLC)
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.
- The biological activity has been validated using cellular assays.

DESCRIPTION

FICZ (6-formylindolo[3,2-b]carbazole) is a highly potent agonist for the cytosolic aryl hydrocarbon receptor (AhR) that results from tryptophan (Trp) conversion upon UV-dependent photo-oxidation or H₂O₂-mediated oxidative stress^{1,2}. The presence of FICZ-derived metabolites in human urine points FICZ to be an endogenous AhR agonist³.

1. Rannug A. et al., 1987. Certain photooxidized derivatives of tryptophan bind with very high affinity to the Ah receptor and are likely to be endogenous signal substances. *J. Biol. Chem.* 262:15422-27. **2. Smirnova A. et al., 2018.** Evidence for new light-independent pathways for generation of the endogenous aryl hydrocarbon receptor agonist FICZ. *Chem. Res. Toxicol.* 29:75-86. **3. Wincent E. et al., 2009.** The suggested physiologic aryl hydrocarbon receptor activator and cytochrome P4501 substrate 6-formylindolo[3,2-b]carbazole is present in humans. *J. Biol. Chem.* 284:2690-96.

CHEMICAL PROPERTIES

CAS number: 172922-91-7

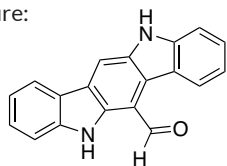
Synonym: 6-Formylindolo[3,2-b]carbazole

Solubility: 2 mg/ml (7 mM) in DMSO

Formula: C₁₉H₁₂N₂O

Molecular weight: 284.31 g/mol

Structure:



METHODS

Preparation of 500 µg/ml (1.76 mM) stock solution

1. Add 2 ml of DMSO to 1 mg of FICZ. Mix by vortexing.
2. Use immediately or store aliquots at -20°C.
3. Prepare further dilutions using sterile endotoxin-free water or PBS.

Working concentration range: 50 ng/ml (0.18 µM) to 5 µg/ml (18 µM) for cell culture assays

AhR activation assay

Described below is a protocol to study AhR activation in [HepG2-Lucia™ AhR cells](https://www.invivogen.com/hepg2-lucia-ahr) which derive from the human HepG2 hepatoma cell line. These cells report AhR activation through the monitoring of human Cyp1a1-induced Lucia luciferase activity. For more information, visit <https://www.invivogen.com/hepg2-lucia-ahr>.

1. Add 20 µl of FICZ at 0.18-18 µM (final concentration) per well of a flat-bottom 96-well plate.
2. Add 180 µl of cell suspension (~20,000 cells) per well.
3. Incubate the plate at 37°C in a 5% CO₂ incubator for 18-24 hours.
4. Monitor Lucia luciferase reporter protein production using a luciferase detection reagent, such as [QUANTI-Luc™ 4 Lucia/Gaussia](https://www.invivogen.com/quantiluc-4-lucia-gaussia).

RELATED PRODUCTS

Product	Description	Cat. Code
CH-223191	AhR inhibitor	inh-ch22
HepG2-Lucia™ AhR Cells	AhR reporter cells	hpgl-ahr
HT29-Lucia™ AhR Cells	AhR reporter cells	ht2l-ahr
QUANTI-Luc™ 4 Lucia/Gaussia	Luminescence detection kit	rep-qlc4lg1

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 Asia: +852 3622-3480

E-mail: info@invivogen.com