

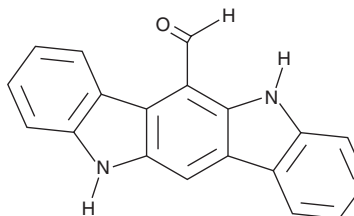
# PRODUCT INFORMATION



## 6-Formylindolo[3,2-b]carbazole

Item No. 19529

**CAS Registry No.:** 172922-91-7  
**Formal Name:** 5,11-dihydro-indolo[3,2-b]carbazole-6-carboxaldehyde  
**Synonym:** FICZ  
**MF:** C<sub>19</sub>H<sub>12</sub>N<sub>2</sub>O  
**FW:** 284.3  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 214, 226, 249, 307, 334, 383, 454 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

6-Formylindolo[3,2-b]carbazole (FICZ) is supplied as a crystalline solid. A stock solution may be made by dissolving the FICZ in the solvent of choice, which should be purged with an inert gas. FICZ is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of FICZ in these solvents is approximately 0.3 and 0.5 mg/ml, respectively.

FICZ is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

FICZ is a degradation product of tryptophan upon exposure to visible light that activates the aryl hydrocarbon receptor (AhR; K<sub>d</sub> = 70 pM).<sup>1</sup> This endogenous AhR ligand is also a good substrate for cytochromes P450 (CYP) 1A1, 1A2, and 1B1 (K<sub>i</sub>s = 15.4, 3.9, and 13.3 μM, respectively).<sup>2</sup> When activated by either environmental toxins or endogenous ligands, the AhR induces detoxifying enzymes and modulates immune cell differentiation. FICZ has been used to study the immunomodulatory and host defense mechanisms of AhR signaling pathways.<sup>3</sup>

### References

1. Rannug, U., Rannug, A., Sjöberg, U., *et al.* Structure elucidation of two tryptophan-derived, high affinity Ah receptor ligands. *J. Biol. Chem.* **2(12)**, 841-845 (1995).
2. Wincent, E., Amini, N., Luecke, S., *et al.* The suggested physiologic aryl hydrocarbon receptor activator and cytochrome P4501 substrate 6-formylindolo[3,2-b]carbazole is present in humans. *J. Bio. Chem.* **284(5)**, 2690-2696 (2009).
3. Moura-Alves, P., Faé, K., Houthuys, E., *et al.* AhR sensing of bacterial pigments regulates antibacterial defence. *Nature* **512(7515)**, 387-392 (2014).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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