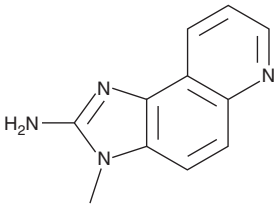
PRODUCT INFORMATION

2-Amino-3-methylimidazo[4,5-f]quinoline

Item No. 21853

CAS Registry No.:	76180-96-6
Formal Name:	3-methyl-3H-imidazo[4,5-f] quinolin-2-amine
Synonym:	IQ
MF:	$C_{11}H_{10}N_4$
FW:	198.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 210, 262, 363 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

2-Amino-3-methylimidazo[4,5-f]quinoline (IQ) is supplied as a crystalline solid. A stock solution may be made by dissolving the IQ in the solvent of choice, which should be purged with an inert gas. IQ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of IQ in ethanol is approximately 15 mg/ml and approximately 10 mg/ml in DMSO and DMF.

IQ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, IQ should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. IQ has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

IQ is a food-derived carcinogen that is found in high temperature-cooked meats and tobacco smoke.[1] In humans, IQ is metabolized by the cytochrome (CYP) P450 isoform CYP1A2 and conjugated by N-acetyltransferase or sulfotransferase to a metabolite that reacts with DNA to form adducts. It induces formation of single-base substitutions and exon deletions and increases cell death *in vitro* in a concentration-dependent manner. *In vivo*, IQ increases the incidence of squamous cell hyperplasias in the stomach of p53 knockout mice and increases hepatocellular lesions in female mice regardless of p53 status.[2]

References

1. Metry, K.J., Neale, J.R., Doll, M.A., *et al.* Effect of rapid human N-acetyltransferase 2 haplotype on DNA damage and mutagenesis induced by 2-amino-3-methylimidazo-[4,5-f]quinoline (IQ) and 2-amino-3,8-dimethylimidazo-[4,5-f]quinoxaline (MeIQx.) *Mutat. Res.* **684(1-2)**, 66-73 (2010).
2. Hirata, A., Tsukamoto, T., Yamamoto, M., *et al.* Organ-dependent susceptibility of *p53* knockout mice to 2-amino-3-methylimidazo[4,5-*f*]quinoline (IQ). *Cancer Sci.* **98(8)**, 1164-1173 (2007).

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