

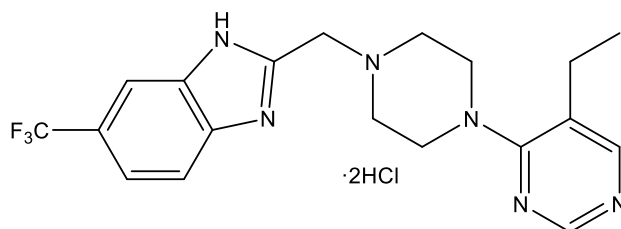
Catalog # 10-4856

PF-4708671 dihydrochloride

CAS# 125517-76-0 (free base)

2-[[4-(5-Ethylpyrimidin-4-yl)piperazin-1-yl]methyl]-5-(trifluoromethyl)-1H-benzimidazole dihydrochloride

Lot # FBA9018



PF-4708671 is a cell permeable inhibitor of p70 ribosomal S6 kinase 1 ($K_i = 20$ nM; $IC_{50} = 160$ nM).¹ Selective against 87 kinases including 13 other AGC family members. It enhanced cell death induced by glucose deprivation in breast cancer cells² and inhibited cell migration in triple-negative breast cancer cells³. PF-4708671 inhibited cell proliferation and invasiveness in multiple non-small cell lung cancer cell lines and inhibited tumorigenesis in mice.⁴ It induced AMPK phosphorylation and activation independently of p70S6K1 *via* specific inhibition of mitochondrial respiratory chain complex I.⁵ PF-4708671 displayed protective effects in a mouse model of cerebral ischemia-reperfusion injury.⁶

- 1) Pearce *et al.* (2010) *Characterization of PF-4708671, a novel and highly specific inhibitor of p70 ribosomal S6 kinase (S6K1)*; *Biochem. J.* **431** 245
- 2) Choi *et al.* (2013) *Inhibition of S6K1 enhances glucose deprivation-induced cell death via downregulation of anti-apoptotic proteins in MCF-7 breast cancer cells*; *Biochem. Biophys. Res. Commun.* **432** 123
- 3) Khotskaya *et al.* (2014) *S6K1 promotes invasiveness of breast cancer cells in a model of metastasis of triple-negative breast cancer*; *Am. J. Transl. Res.* **6** 361
- 4) Qiu *et al.* (2016) *The p70S6K Specific Inhibitor PF-4708671 Impedes Non-Small Cell Lung Cancer Growth*; *PLoS One*, **11** e0147185
- 5) Vainer *et al.* (2014) *PF-4708671 activates AMPK independently of p70S6K1 inhibition*; *PLoS One*, **9** e107364
- 6) Chi *et al.* (2019) *Inhibition of p70 ribosomal S6 kinase 1 (S6K1) by PF-4708671 decreased infarct size in early cerebral ischemia-reperfusion with decreased BBB permeability*; *PLoS One*, **9** e107364

PHYSICAL DATA

Molecular Weight:	463.33
Molecular Formula:	C ₁₉ H ₂₁ F ₃ N ₆ · 2HCl
Purity:	>98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (at least 35 mg/ml); Water (at least 50 mg/mL)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 1 month. Hygroscopic solid – protect from moisture and humidity.

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