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DATASHEET

Metformin hydrochloride

Product overview

Name	Metformin hydrochloride
Cat No	HB2153
Biological action	Activator
Description	LKB1/AMPK activator. Also promotes neurogenesis.

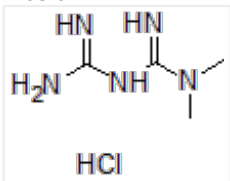
Biological Data

Biological description	LKB1/AMPK activator which is blood brain barrier permeable. It improves insulin sensitivity and decreases plasma glucose levels to show antidiabetic activity. Additionally, it displays antiproliferative effects in cancer cell lines, inhibits cancer stem cells (CSCs) and shows anticancer and anti-neoplastic effects. It also promotes neurogenesis by activating the PKC-CBP pathway. Recently investigated as part of COVID-19 compound repurposing.
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Solubility & Handling

Storage instructions	Room temperature
Solubility overview	Soluble in water (100mM) or DMSO (50mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	<i>N,N</i> -Dimethylimidodicarbonimidic diamide hydrochloride
Molecular Weight	165.62
Chemical structure	 <p>The chemical structure shows a central carbon atom double-bonded to two nitrogen atoms. One nitrogen atom is bonded to a hydrogen atom and an amino group (H₂N). The other nitrogen atom is bonded to a hydrogen atom and a dimethylamino group (N(CH₃)₂). The entire structure is associated with HCl.</p>
Molecular Formula	C ₄ H ₁₁ N ₅ .HCl
CAS Number	1115-70-4
PubChem identifier	14219
SMILES	CN(C)C(=N)N=C(N)N.Cl
InChi	InChI=1S/C4H11N5.ClH/c1-9(2)4(7)8-3(5)6;/h1-2H3,(H5,5,6,7,8);1H
InChiKey	OETHQSJEHLVLGH-UHFFFAOYSA-N
MDL number	MFCD00012582
Appearance	White solid

References

AMP-activated protein kinase in metabolic control and insulin signaling.

Towler and Hardie (2007) Circ Res 100(3)

PubMedID [17307971](#)

Metformin, cancer and glucose metabolism.

Salani et al (2014) Endocr Relat Cancer 21(6)

PubMedID [25273809](#)

Metformin activates an atypical PKC-CBP pathway to promote neurogenesis and enhance spatial memory formation.

Wang et al (2012) Cell Stem Cell 11(1)

PubMedID [22770240](#)

A SARS-CoV-2 protein interaction map reveals targets for drug repurposing

Krogan et al (2020) Nature 7816

PubMedID [32353859](#)
