



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

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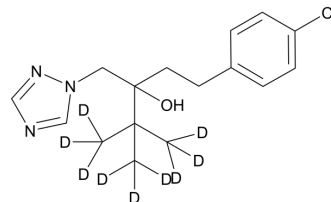
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## Tebuconazole-d9

<b>Cat. No.:</b>	HY-B0852S
<b>CAS No.:</b>	1246818-83-6
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>13</sub> D <sub>9</sub> ClN <sub>3</sub> O
<b>Molecular Weight:</b>	316.87
<b>Target:</b>	Fungal; Cytochrome P450
<b>Pathway:</b>	Anti-infection; Metabolic Enzyme/Protease
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Tebuconazole-d <sub>9</sub> is the deuterium labeled Tebuconazole. Tebuconazole is an agricultural azole fungicide which can also inhibit CYP51 with IC50s of 0.9 and 1.3 μM for <i>Candida albicans</i> CYP51 (CaCYP51) and truncated <i>Homo sapiens</i> CYP51 (Δ60 HsCYP51), respectively.																
<b>In Vitro</b>	<p>Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis<sup>[2]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>HepG2 cells</td> </tr> <tr> <td>Concentration:</td> <td>20,40,80 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>1–12 hours</td> </tr> <tr> <td>Result:</td> <td>Increased the nuclear translocation of peroxisome proliferator-activated receptors and the expression of cluster of differentiation 36, fatty acid transport protein (FATP) 2, FATP5, and carnitine palmitoyltransferase 1.</td> </tr> </table> <p>Apoptosis Analysis<sup>[3]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>Bovine mammary gland epithelial cells (MAC-T cells)</td> </tr> <tr> <td>Concentration:</td> <td>100,150,200,250,500,750 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>Decreased cells viability and proliferation and activates apoptotic cell death via the upregulation of pro-apoptotic proteins, such as cleaved caspases 3 and 8 and BAX. Induced loss of mitochondrial membrane potential in MAC-T cells. Induced mitochondria-mediated apoptotic MAC-T cell death by activating ER stress. Induced endoplasmic reticulum (ER) stress via the upregulation of Bip/GRP78; PDI; ATF4; CHOP; and ERO1-<math>\alpha</math>.</td> </tr> </table>	Cell Line:	HepG2 cells	Concentration:	20,40,80 μM	Incubation Time:	1–12 hours	Result:	Increased the nuclear translocation of peroxisome proliferator-activated receptors and the expression of cluster of differentiation 36, fatty acid transport protein (FATP) 2, FATP5, and carnitine palmitoyltransferase 1.	Cell Line:	Bovine mammary gland epithelial cells (MAC-T cells)	Concentration:	100,150,200,250,500,750 μM	Incubation Time:	24 hours	Result:	Decreased cells viability and proliferation and activates apoptotic cell death via the upregulation of pro-apoptotic proteins, such as cleaved caspases 3 and 8 and BAX. Induced loss of mitochondrial membrane potential in MAC-T cells. Induced mitochondria-mediated apoptotic MAC-T cell death by activating ER stress. Induced endoplasmic reticulum (ER) stress via the upregulation of Bip/GRP78; PDI; ATF4; CHOP; and ERO1- $\alpha$ .
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## REFERENCES

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- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother*. 2019;53(2):211-216.
- [2]. Warrilow AG, et al. Azole affinity of sterol 14 $\alpha$ -demethylase (CYP51) enzymes from *Candida albicans* and *Homo sapiens*. *Antimicrob Agents Chemother*. 2013 Mar;57(3):1352-60.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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