# Mestranol-$d_4$

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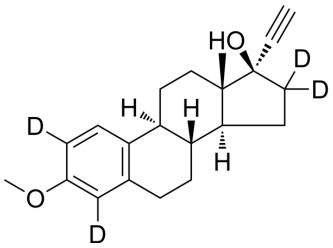
| **Cat. No.:** | HY-B0390S1 |
| **Molecular Formula:** | $C_{21}H_{22}D_4O_2$ |
| **Molecular Weight:** | 314.45 |
| **Target:** | Estrogen Receptor/ERR; Isotope-Labeled Compounds |
| **Pathway:** | Vitamin D Related/Nuclear Receptor; Others |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |




## BIOLOGICAL ACTIVITY

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| **Description** | Mestranol-d4 is the deuterium labeled Mestranol. Mestranol is an inactive proagent and becomes biologically active on conversion to ethinyl estradiol (EE). Mestranol acts as an estrogen receptor agonist. Mestranol combines with a progestin in vivo and can be used for the research of menopausal hormone or menstrual disorders[1][2][3]. Mestranol-d4 is a click chemistry reagent, it contains an Alkyne group and can undergo copper-catalyzed azide-alkyne cycloaddition (CuAAc) with molecules containing Azide groups. |
| **In Vitro** | 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[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. H Kappus, et al. Affinity of ethynyl-estradiol and mestranol for the uterine estrogen receptor and for the microsomal mixed function oxidase of the liver. J Steroid Biochem. 1973 Mar;4(2):121-8.

[3]. J W Goldzieher, et al. Pharmacokinetics of ethinyl estradiol and mestranol. Am J Obstet Gynecol. 1990 Dec;163(6 Pt 2):2114-9.

[4]. S Y Jiang, et al. Tamoxifen inhibits hepatoma cell growth through an estrogen receptor independent mechanism. J Hepatol. 1995 Dec;23(6):712-9.



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