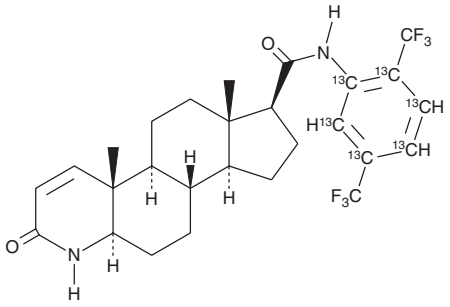
PRODUCT INFORMATION

Dutasteride-$^{13}C_6$

Item No. 25313

CAS Registry No.: 1217685-27-2
Formal Name: (4aR,4bS,6aS,7S,9aS,9bS,11aR)-N-(2,5-*bis*(trifluoromethyl)phenyl-1,2,3,4,5,6-$^{13}C_6$)-4a,6a-dimethyl-2-oxo-2,4a,4b,5,6,6a,7,8,9,9a,9b,10,11,11a-tetradecahydro-1H-indeno[5,4-f]quinoline-7-carboxamide
MF: $C_{21}[^{13}C]_6H_{30}F_6N_2O_2$
FW: 534.5
Purity: ≥98%
Supplied as: A 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

Dutasteride-$^{13}C_6$ is supplied as a solid. A stock solution may be made by dissolving the dutasteride-$^{13}C_6$ in the solvent of choice. Dutasteride-$^{13}C_6$ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of dutasteride-$^{13}C_6$ in in ethanol and DMSO is approximately 10 mg/ml and approximately 30 mg/ml in DMF.

Description

Dutasteride-$^{13}C_6$ is intended for use as an internal standard for the quantification of dutasteride (Item No. 15956) by GC- or LC-MS. Dutasteride is a dual inhibitor of 5α-reductase types I and II (K_is = 6 and 7 nM, respectively).[1-3] Its inhibition is time-dependent with apparent K_i values of 17 and 4.3 nM at 10- and 30-minute reaction times, respectively.[1] Dutasteride decreases prostate weight in a rat model of benign prostatic hypertrophy induced by testosterone after castration when administered daily for 28 days at doses of 0.045 mg/kg as a solution or 0.756 mg/kg in subcutaneous microspheres.[4] It also decreases prostate weight in large probasin-large T antigen mice, a transgenic model of prostate cancer.[5] Formulations containing dutasteride have been used in the treatment of benign prostatic hyperplasia.

References

1. Makridakis, N. and Reichardt, J.K. Pharmacogenetic analysis of human steroid 5α reductase type II: Comparison of finasteride and dutasteride. *J. Mol. Endocrinol.* **34(3)**, 617-623 (2005).
2. Bramson, H.N., Hermann, D., Batchelor, K.W., *et al.* Unique preclinical characteristics of GG745, a potent dual inhibitor of 5AR. *J. Pharmacol. Exp. Ther.* **282(3)**, 1496-1502 (1997).
3. Tian, G., Stuart, J.D., Moss, M.L., *et al.* 17β-(N-tert-butylcarbamoyl)-4-aza-5 α-androstan-1-en-3-one is an active site-directed slow time-dependent inhibitor of human steroid 5 α-reductase 1. *Biochemistry* **33(8)**, 2291-2296 (1994).
4. Xie, X., Yang, Y., Chi, Q., *et al.* Controlled release of dutasteride from biodegradable microspheres: *In vitro* and *in vivo* studies. *PLoS One* **9(12)**, e114835 (2014).
5. Shao, T.C., Li, H., Ittmann, M., *et al.* Effects of dutasteride on prostate growth in the large probasin-large T antigen mouse model of prostate cancer. *J. Urol.* **178(4 Pt. 1)**, 1521-1527 (2007).

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