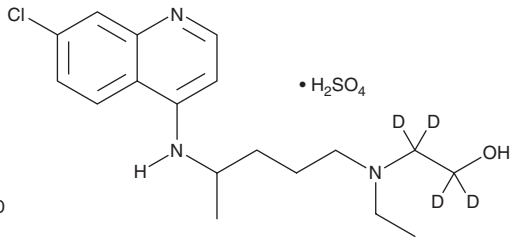
PRODUCT INFORMATION

Hydroxychloroquine-d_4 (sulfate)

Item No. 22375

CAS Registry No.: 1854126-45-6
Formal Name: 2-[[4-[(7-chloro-4-quinolinyl)amino] pentyl]ethylamino]-ethanol-1,1,2,2-d_4, monosulfate
Synonym: HCQ-d_4
MF: $C_{18}H_{22}D_4ClN_3O \bullet H_2SO_4$
FW: 438.0
Chemical Purity: ≥95% (Hydroxychloroquine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years
Special Conditions: Hygroscopic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Hydroxychloroquine-d_4 (sulfate) contains four deuterium atoms and is intended for use as an internal standard for the quantification of hydroxychloroquine (Item No. 17911) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Description

Hydroxychloroquine is an aminoquinoline with antimalarial, anti-inflammatory, and antiviral activities.[1-4] It is active against the chloroquine-sensitive NF54 and D6 strains of *P. falciparum* (IC_{50}s = 16.3 and 15 nM, respectively) but has decreased activity against chloroquine-resistant *P. falciparum* strains (IC_{50}s = 422.7-1,735.3 nM).[1] Hydroxychloroquine inhibits production of IL-22, IL-17A, and IL-6 induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) and ionomycin (Item No. 10004974) in peripheral blood mononuclear cells (PBMCs) isolated from healthy individuals or patients with systemic lupus erythematosus (SLE) or rheumatoid arthritis (RA).[3] It inhibits accumulation of sequestosome-1 (SQSTM1) puncta, a marker of autophagy, in mouse embryonic fibroblasts (MEFs) in a concentration-dependent manner.[2] Hydroxychloroquine reduces viral titers of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the culture supernatant of infected Vero E6 cells but does not reduce SARS-CoV-2 viral titers in an *in vitro* human airway epithelium model or the respiratory tract of infected cynomolgus macaques.[4] Formulations containing hydroxychloroquine have been used in the prevention or treatment of malaria, as well as in the treatment of RA and SLE.

References

1. Delves, M., Plouffe, D., Scheurer, C., *et al. PLoS Med.* **9(2)**, e1001169 (2012).
2. Mauthe, M., Orhon, I., Rocchi, C., *et al. Autophagy* **14(8)**, 1435-1455 (2018).
3. da Silva, J.C., Mariz, H.A., da Rocha, L.F., Jr., *et al. Clinics (Sao Paulo)* **68(6)**, 766-771 (2013).
4. Maisonnasse, P., Guedj , J., Contreras, V., *et al. Nature* **585(7826)**, 584-587 (2020).

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