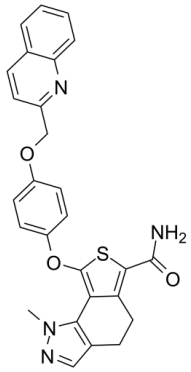
Data Sheet

Product Name:	TD-198946
Cat. No.:	CS-6860
CAS No.:	364762-86-7
Molecular Formula:	C27H22N4O3S
Molecular Weight:	482.55
Target:	Others
Pathway:	Others
Solubility:	DMSO : ≥ 28 mg/mL (58.03 mM)



BIOLOGICAL ACTIVITY:

TD-198946, a thienoindazole derivative, is a potent chondrogenic agent. **In Vitro:** TD-198946 is a potent chondrogenic agent. TD-198946 strongly induces chondrogenic differentiation without promoting hypertrophy in cell and metatarsal organ cultures. TD-198946 induces stronger Col2a1 promoter activity than insulin in ATDC5 cells. In C3H10T1/2 cells, ATDC5 cells and primary mouse chondrocytes, TD-198946 dose-dependently stimulates endogenous expression of the chondrocyte markers Col2a1 and Acan, with maximum effects around 1-10 μM[1]. **In Vivo:** When administered directly into the joint space, TD-198946 successfully prevents and repaires degeneration of the articular cartilage. TD-198946 exerts its effect through the regulation of Runx1 expression, which is downregulated in both mouse and human OA cartilage compared with normal tissue[1]. TD-198946 has disease-modifying effects on progressed osteoarthritis. TD-198946 may prevent the progression of osteoarthritis by acting on the remaining chondrocytes rather than repairing damaged cartilage, it may be most effective as a therapeutic during the early or middle stages of osteoarthritis, before the articular cartilage is fully eroded[2]. Cartilaginous cell-sheets are generated by culturing mouse and canine costal chondrocytes and human mesenchymal stem cells with TD-198946 on temperature-responsive dishes. The transplanted cell-sheets are then successfully used to promote the reconstruction of permanent cartilage, with no evidence of chondrocyte hypertrophy in the knee articular cartilage defects created in mice and canines[3].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: For intra-articular injection, TD-198946 is dissolved at 100 nM in a solution of 45% 2-hydropropyl-b-cyclodextrin in saline.[1]Mouse: Each of the prevention and repair models had two groups: (1) TD-198946-treated animals and (2) saline-treated animals. In all the mice tested the left knee joints underwent the operation and the right knee joints are sham-operated. Mice are re-anaesthetised and given a 10 μL intra-articular injection of TD-198946 or saline immediately after surgery (prevention model) or 4 weeks following surgery (repair model) every 5 days for 8 or 4 weeks, respectively[1].

References:

[1]. Yano F, et al. A novel disease-modifying osteoarthritis drug candidate targeting Runx1. Ann Rheum Dis. 2013 May;72(5):748-53.

[2]. Yano F, et al. Disease-modifying effects of TD-198946 on progressed osteoarthritis in a mouse model. Ann Rheum Dis. 2014 Nov;73(11):2062-4.

[3]. Yano F, et al. Cell-sheet technology combined with a thienoindazole derivative small compound TD-198946 for cartilage regeneration. Biomaterials. 2013 Jul;34(22):5581-7.

CAIndexNames:

1H-Thieno[3,4-g]indazole-6-carboxamide, 4,5-dihydro-1-methyl-8-[4-(2-quinolinylmethoxy)phenoxy]-

SMILES:

O=C(C1=C2CCC3=C(N(C)N=C3)C2=C(OC4=CC=C(OCC5=NC6=CC=CC=C6C=C5)C=C4)S1)N

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