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ABT263 (Navitoclax) Treatment in Mice

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Protocol status: In development

We are still developing and optimizing this protocol.

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Abstract

This protocol is for treating mice with the senolytic, Navitoclax, by oral gavage.

Materials

ABT263 (Navitoclax) from SelleckChem (cat no S1001)

Phosal 50PG from Fisher Scientific (cat no 502029444)

PEG400 from Fisher Scientific (cat no 502029444)

Ethanol 200 proof from VWR (cat no 71006-012 (EA))

Feeding Needle for Oral Gavage 20G x 38mm (2mm Tip) Curved from Pet Surgical (cat no DAFN2038C)

Vehicle is made as a solution of 60% Phosal 50PG, 30% PEG400, 10% Ethanol by volume. Phosal 50PG and PEG400 are very viscous and so may require extra time, heat, and/or positive displacement pipets to effectively move and mix. Dissolution of ABT263 in the vehicle requires heat (50-60°C ideally with shaking) and can be aided by sonication. Drug can be dissolved in the vehicle at 12.5mg/ml (100mg in 8ml vehicle). We did not test other concentrations.

Safety warnings

! Always use recommended PPE from your institutional safety department (lab coat, gloves, eye protection, masks, etc.). This can also help to prevent contamination of your samples.

Ethics statement

All experiments using mice should be first approved by the appropriate oversight organization of your locale.

Before start

ABT263 must first be dissolved in the vehicle by heating to 60°C. Sonication can be used to dissolve faster. See the materials section for specifics.



- 1 Give mice Navitoclax or Vehicle by oral gavage at 50mg/kg/day. Mice receive vehicle or drug for a total of 14 days, spread across 6 weeks, as outlined in the sub-steps below.
 - 1.1 Mice receive seven days of once-daily oral gavage of drug or vehicle
 - 1.2 Then fourteen days with no treatment
 - 1.3 Then seven more days of once-daily oral gavage of drug or vehicle
 - 1.4 Then fourteen days with no treatment
 - 1.5 Harvest tissues after the last day of no treatment

Protocol references

This protocol is adapted from the protocol in: Chang J, Wang Y, Shao L, Laberge RM, Demaria M, Campisi J, Janakiraman K, Sharpless NE, Ding S, Feng W, Luo Y, Wang X, Aykin-Burns N, Krager K, Ponnappan U, Hauer-Jensen M, Meng A, Zhou D. Clearance of senescent cells by ABT263 rejuvenates aged hematopoietic stem cells in mice. Nat Med. 2016 Jan;22(1):78-83. doi: 10.1038/nm.4010. Epub 2015 Dec 14. PMID: 26657143; PMCID: PMC4762215. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4762215/>