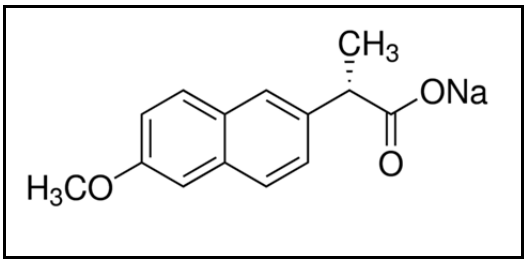
Naproxen Sodium (Naprosyn)
500 mg tablet

Structure:



Molecular Formula and Mass: $C_{14}H_{13}NaO_3$ - 252.24
Category: Anti-inflammatory
Sample:

Grind 1 tablet and dissolve in 50.00 mL methanol. The concentration of the solution = (500 mg/50.00 mL)= 10.0 mg/mL. Solution is then filtered and 1.00 mL is further diluted with an additional 24.00 mL of methanol creating a final concentration of 0.400 mg/mL. The required concentration of the sample solution representing 100% is 0.400 mg/mL.

Standards:

High standard:

The high limit is 115%; therefore the concentration of high standard = (0.400 mg/mL) X 1.15 = 0.460 mg/mL. Weigh approximately 11.5 mg of standard. If you weighed 11.3 mg of standard, dissolve it in: (11.3 mg)/(0.460 mg/mL) = 24.6 mL of methanol.

Low standard:

The low limit is 85%; therefore the concentration of low standard = (0.400 mg/mL) X 0.85 = 0.340 mg/mL. Dilute 1.00 mL of high standard to 1.35 mL by adding 0.35 mL of methanol (1.15/0.85 = 1.35).

Spotting:

Spot on the 5 X 10 cm silica gel TLC aluminium plate with 3 µL aliquots as follows:

Left spot	low standard (85%) = 1.02 µg
Center Spot	100% sample = 1.20 µg
Right Spot	high standard (115%) = 1.38 µg

Development:

Mix 47.50 mL of ethyl acetate with 2.50 mL of glacial acetic acid. Develop the plate in a small glass chamber with approximately 20.00 mL of this solution until the solvent front reaches to within 1 cm of the top of the TLC plate. (R_f = 0.65)

Detection:

UV:

Dry the plate and observe under UV light (254 nm). Observe the intensity and the size of the spots.

Developed and tested by Danhui Zhang and Joseph Sherma, Department of Chemistry, Lafayette College, Easton, PA, USA. July 6, 2015.