

Naproxen is a drug that belongs to non-steroidal anti-inflammatory drugs (NSAIDs). It works by blocking the synthesis of some compounds that trigger a role in inflammation (Figure 1). It has many uses in the medical field and administered orally and topically.

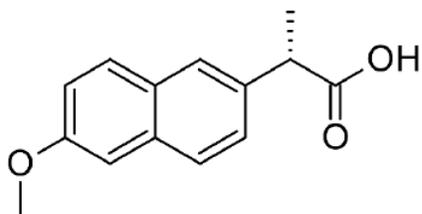


Figure 1: chemical structure of naproxen

Using the skin for administration of the drug has many advantages like reducing the side effect especially on stomach, less systemic absorption and raising patient compliance (1). NSAIDs one of the main groups to be used topically and they give a very good pharmacological effect (2). But there is many problems to take into consideration especially the variability among patients so we have to reduce it by predicting these variable measures and try to reduce them (3).

There are many factors affecting the permeation through the skin and mainly it is affected by hydrophilic-lipophilic balance so it is important to know this feature of our drug. Drugs that are very soluble in water are difficult to permeate through the skin, but it is also bad to have a very lipophilic drug because it will not pass through the water-rich tissues (4, 5). One of the challenges in transdermal application is stability, it is important to prevent the photodegradation of the drug after application (6) and also it is important to protect the drug from enzymatic degradation after reaching the skin, so we may need to make a pro-drug (7).