

Codeine

Drug Class: Opioid analgesic

- Used to manage pain in patients.

Gene of Interest: CYP2D6

- The enzyme CYP2D6 converts codeine to its active metabolite, morphine, which exerts the analgesic effects.

Drug-Gene Interactions:

- **Poor Metabolizer:** Patients with CYP2D6 variants *3/*4, *4/*4, *5/*5, and *5/*6 are poor metabolizers of codeine which causes reduced formation to the active metabolite, morphine. The CPIC guidelines recommend against codeine use in these patients due to the decreased analgesic effects.
- **Ultrarapid Metabolizer:** Patients with CYP2D6 variants *1/*1xN, *1/*2xN, and *2/*2xN metabolize codeine to morphine much faster which causes more morphine formation in these patients. The CPIC guidelines recommend against codeine use in these patients due to an increased risk of toxicity.