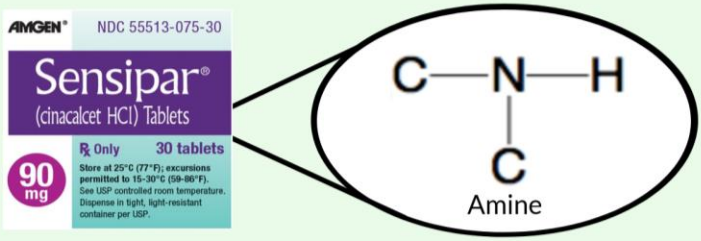
Green Synthesis of Pharmaceuticals

Iridium in Alcohol to Amine conversion

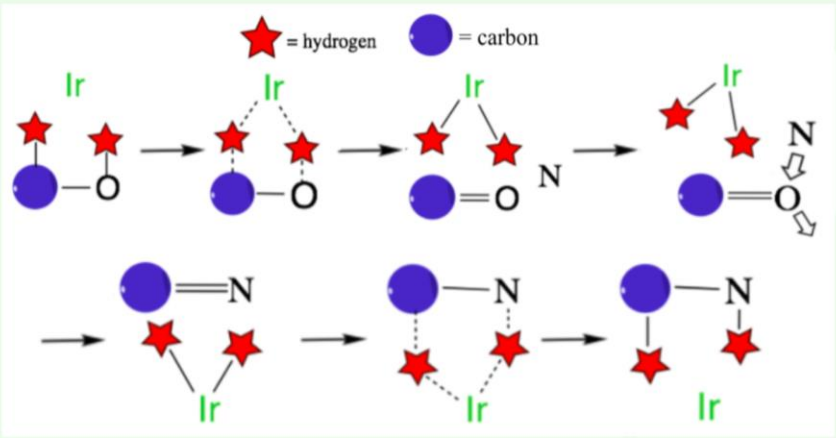
- Many **drugs** contain building blocks called **amines**, which contain carbon-nitrogen bonds
- An example of these drugs is Cinacalet:
  This drug is sold under the name **Sensipar®** to treat hyperparathyroidism



- **Pharmaceutical synthesis** is the chemical process of **creating drugs**
- An important process in pharmaceutical synthesis involves converting **alcohols** (building blocks containing carbon-oxygen bonds) **to amines**

Strong acid is a common waste product of traditional **alcohol to amine pharmaceutical synthesis**

- **Organometallic catalysts speed up** the reaction, perform the same reaction with **fewer steps**, and produce **no harmful waste products**
- **Iridium** organometallic catalysts are good at converting alcohols to amines
- Here is how they work:



- **Organometallics** help make drug production processes **environment-friendly**

References

1. Crabtree, R. H. *Organometallics*, **2011**, *30*(1), 17–19.
2. Elangovan, S.; Neumann, J.; Sortais, J.-B.; Junge, K.; Darcel, C.; Beller, M. *Nature Communications*, **2016**, *7*, 12641.

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