

- Rate of reaction depends on the pKa's of pyridyl and benzimidazole nitrogen.
- Electron releasing substituents on pyridine ring make the PPI more reactive. Electron releasing groups on pyridinyl ring make it more reactive.

Preparing powders for compression

- Wet granulation: typically add solvent and binder to powder, mix, dry, break up through screen to produce.
- Dry granulation: typically mix powders, preliminary compress using rollers and large punches.
- Direct granulation: Use excipients that have good flow properties, do not granulate.

Tableting journey

Mixing powders -> Granulation -> Compression -> Coating -> Packing

Excipients

- Other ingredients other than the active.
- Reasons to use excipients:
 - Ease of administration
 - Improved dosing compliance
 - Control of drug bioavailability
 - Improve drug stability including protection from degradation
 - Ensure a robust product

Idea properties of an excipient

- No toxic
- Required physicochemical properties
 - Chemically inert
 - Non hygroscopic (stops absorbing moisture)
 - Inexpensive
 - Consistent

Tablet functional classifications

- Diluents, e.g. lactose
- Disintegrants, e.g. starch glycolate
- Binders, e.g. PVP
- Lubricants, e.g. magnesium stearate
- Glidants, e.g. colloidal SiO₂
- Others, e.g. colours, flavours

Disintegrants

- Cause rapid break up of tablets upon exposure to moisture, to promote drug release.
- Water uptake causes tablet disintegration, by rupturing the intraparticles cohesive forces that hold the tablet together, e.g. starch, cellulose.

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