

Excipients



Excipients

- + Anti-adherents
- + Antioxidants
- + Binders
- + Coatings
- + Colours
- + Diluents
- + Disintegrants
- + Flavours
- + Glidants
- + Lubricants

Ideal Characteristics

- + Inert
- + No effect on the bioavailability of the active ingredient
- + Physiologically and chemically stable
- + Bacteria-free
- + Low cost
- + Meet regulatory standards

Pros

- + Improves the manufacturing process
- + Improves the stability
- + Improves the bioavailability

Cons

- + Risk of possible interactions

Complementary medicines are comprised of a combination of ingredients where the active ingredients are biologically active, and the excipients are ideally inert. Excipients have well-defined roles in the development of dosage forms and are added to the formulation to improve the manufacturing, stability and bioavailability of the finished product. Many of these excipients possess more than one function which minimises the number of excipients required in the formulation hence, reducing the risk of possible interactions between them.

Role of Excipients

Anti-adherents

Create a non-stick surface which prevents the material from adhering to the equipment
e.g. Magnesium Stearate

Antioxidants

Prevent or reduce oxidation of ingredients that are susceptible to oxidative degradation
e.g. Ascorbic acid and Vitamin E

Binders

Maintain the form of the tablet by binding the ingredients together
e.g. Povidone, Calcium hydrogen phosphate dihydrate, Maltodextrin and Maize Starch

Coatings

Assist with product identification and aesthetics. Mask unpleasant taste and smell. Protect from deterioration caused by environmental factors. Controls the release rate of the active ingredient
e.g. Hypromellose and Macrogol

Colours

Change the appearance of the dosage form for product identification, uniformity and brand matching
e.g. Titanium dioxide and Iron oxides

Diluents

Acts as a bulking agent
e.g. Microcrystalline cellulose, Calcium hydrogen phosphate dihydrate and Maltodextrin

Disintegrants

Assist with the breakdown of the tablet in the gastrointestinal tract which releases the active ingredient for absorption
e.g. Crospovidone, Croscarmellose sodium and Maize Starch

Flavours

Mask unpleasant taste and smell
e.g. Vanillin and Mannitol

Glidants

Improve the flowability of the material by reducing friction between particles
e.g. Colloidal anhydrous silica

Lubricants

Decrease the friction between the tablet's surface and the die wall during compression and ejection
e.g. Magnesium Stearate, Stearic acid and Talc