API-Excipient Compatibility

Preformulation is a crucial phase in drug development in which the physicochemical profiling of active pharmaceutical ingredients (APIs) and excipients is determined and prototype formulations made. In the dosage form, the API is in direct contact with other components (excipients) in the formulation, thus facilitating drug administration and release and protecting it from environmental impacts. Although excipients are pharmacologically inert, they can interact with drugs in dosage forms, thereby affecting the stability of drugs in physical aspects, such as sensory properties, reduced dissolution or Chemically, which can cause drug degradation. The effective formulation requires careful selection of excipients to make it easy to administer, improve patient compliance, promote drug release and bioavailability, and extend its shelf life. Therefore, the compatibility screening of API with excipients or other active ingredients is considered as one of the essential parts in preformulation.

CD Formulation can provide you with comprehensive services of API-excipient compatibility, our services can save both time and cost for you by assessing the risk of excipient interactions prior to formulation development. We test the materials that need in the formulation to determine their chemical and physical properties, and our scientists will help you to make a decision for operational and procedural conditions that can ensure the physical and chemical stability and pharmacological activity of the product to minimize potential formulation and stability issues.

Our API-Excipient Compatibility Services

- Obtain an in-depth understanding of physical or chemical API-excipient interactions.
- Support the selection of the most appropriate excipients in dosage form design.

Our Methods for API-Excipient Compatibility

Techniques	Methods
Thermal methods of analyses	Differential scanning calorimetry (DSC)
	Isothermal microcalorimetry
	Hot stage microscopy (HSM)
Spectroscopic technique	Vibrational spectroscopy
	Powder X-ray diffraction (PXRD)
	Solid state nuclear magnetic resonance spectroscopy (ss NMR)
Microscopic technique	Scanning electron microscopy (SEM)
Chromatography	Self-Interactive Chromatography (SIC)
	Thin Layer Chromatography (TLC)
	High-Performance Liquid Chromatography (HPLC)

Deliverable

- Data analysis
- Provide full study report