# "Role of drug substance attributes on final approval of a marketed product"

Chitra Sharma
gCompliance, Inc.

*- where Science meets Quality*

# Drug Substance

- Synthesis requirements
  - Scaleable
  - Consistency in quality of materials
  - Process controls
  - Set Points
- Starting Materials
  - Supply Chain and implications on product quality
- Key Starting materials
  - Ring opening
  - Multi step synthesis versus 2 step or assemblies

# Drug Substance

XRPD

Solubility

Permeability

Stability Characteristics

Particle Size

Impurity/Degradation

# Drug Substance

- BCS Classification
- Relationship to Safety ( and Adverse events)
  - Impurities
  - Metabolites
  - Degradation
- Relationship to activity
  - Efficacy
- Adverse events in both cases

# Challenges – Define, learn and follow

- **Process**
  - Goal: Process validation for drugs (finished pharmaceuticals and components) is a legally enforceable requirement under section 501(a)(2)(B) of the Act (21 U.S.C. 351(a)(2)(B))

# Validation Processes

- The foundation for process validation is provided in § 211.100(a), which states that "there shall be written procedures for production and process control *designed to assure* that the drug products have the identity, strength, quality, and purity they purport or are represented to possess..."

  *If you know you can write it*

# Validation Processes

- The CGMP regulations require that manufacturing processes be designed and controlled to assure that in-process materials and the finished product meet predetermined quality requirements and do so consistently and reliably.

- The regulation requires manufacturers to design a process, including operations and controls, which results in a product meeting these attributes.

# Validation Processes

- The goal of validation is continual assurance that the process remains in a state of control (the validated state) during commercial manufacture.

- A system or systems for detecting unplanned departures from the process as designed is essential to accomplish this goal.

# Industry to Patients

- Produce Quality products to serve the American Public
- Partner with the Agency to ensure Quality
- Follow regulations to confirm Quality and Compliance
- Trend and change practices to ensure improvements throughout Product Lifecycle

# Thank you!