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REVIEW ARTICLE
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NAVIGATING SOUTH KOREA'S MFDS REGULATORY REQUIREMENTS FOR INDIAN API MANUFACTURERS DESPITE HOLDING USFDA APPROVAL

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ABSTRACT
Many Indian pharmaceutical companies have built strong track records supplying Active Pharmaceutical Ingredients (APIs) to the United States and navigating USFDA inspections. However, having a smooth USFDA history doesn't automatically mean South Korea's Ministry of Food and Drug Safety (MFDS) will fast-track your product. Even though global guidelines like PIC/S and ICH help bring countries closer together on standards, South Korea still has its own unique laws, filing steps, and evidence rules. This article looks at why Indian manufacturers with solid quality systems can still hit roadblocks or face unexpected questions when trying to break into the South Korean market. Often, the issue comes down to differences in inspection scopes, evidence packages, supply chains, and specific product processes. To bridge the gap, companies need to focus closely on data integrity, impurity controls, starting-material traceability, validation, and change management. Success ultimately relies on doing your homework early, keeping your technical dossiers completely aligned with day-to-day manufacturing, and working closely with local Korean applicants.

Keywords: *Good Manufacturing Practice,RegulatoryCompliance,Technical Dossier Consistency, Ministry of Food and Drug Safety, PIC/S.*

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INTRODUCTION
India has a large and diverse pharmaceutical manufacturing sector, and many Indian companies supply APIs to customers in highly regulated markets. Experience with USFDA inspections can help a company strengthen production controls, laboratory practices, documentation, deviation handling, and quality oversight. Even so, the meaning of an inspection outcome needs to be understood carefully. An inspection reflects the site and activities examined at a particular time. It should not be interpreted as automatic approval of every product made at the site, every later process change, or every application submitted to another regulator.South Korea has its own pharmaceutical regulatory framework, administered by the MFDS. Its published approval-process information describes the quality data expected for drug substances and notes the role of GMP evaluation in the wider review process [1]. MFDS also publishes a separate Regulation on the Registration of Active Pharmaceutical Ingredient [2]. For manufacturers, this means that Korean API registration should be planned as a distinct regulatory exercise-not assumed to follow automatically from experience in the United States.The issue is not that one regulator's standards are inherently better than another's, nor that PIC/S requires manufacturers to maintain an entirely unrelated quality system. Rather, shared GMP principles sit alongside country-specific laws, filing procedures, evidence

requirements, and applicant responsibilities. A manufacturer may have effective procedures for its US business but still need to improve how it presents the manufacturing process in a Korean dossier, demonstrates acceptable GMP status, documents changes, or answers questions about starting materials, impurities, and data governance.

This article asks why an Indian API manufacturer with a satisfactory USFDA inspection history may still encounter delays, follow-up questions, or further GMP scrutiny when registering or supplying an API in South Korea. It examines the gap that can arise between having a sound quality system and being fully prepared for a particular market's regulatory process. A strong USFDA inspection history is valuable evidence, but not a substitute for Korean regulatory due diligence. Successful access depends on the fit between the API, manufacturing site, dossier, GMP evidence, and the current requirements applied by MFDS.

SOUTH KOREAN REGULATORY CONTEXT OF APIS

MFDS describes pharmaceutical approval as a review of safety, efficacy, and quality, with manufacturing and distribution controls also considered where relevant. Its public overview identifies a range of drug-substance information, including identity, physicochemical properties, manufacturing method, specifications, test methods, supporting results, reference standards, and packaging details [1]. Most experienced API manufacturers will recognize these technical elements. The challenge is often to present them as a clear, consistent, well-supported package that matches the process actually used at the site.

MFDS separately publishes the Regulation on the Registration of Active Pharmaceutical Ingredient (listed as Notification No. 2021-8 on its English regulatory page, with the page showing a 2022 registration date) [2]. The existence of a dedicated instrument means that the manufacturer and Korean applicant should determine whether the API is subject to registration, what route applies, who holds or submits the relevant file, and which supporting GMP documents are acceptable. The regulatory strategy should not be based solely on a distributor's past experience with a different molecule.

Practical Implications for Foreign Manufacturer

- Confirm the API's Korean regulatory status and the exact legal basis for the proposed pathway.
- Agree early on the roles of the Indian manufacturer, Korean importer/marketing authorization holder, and any local agent.
- Map each dossier requirement to a controlled source document, owner, approval status, and translation requirement.
- Confirm what GMP certificate, inspection report, declaration, or other evidence MFDS currently accepts for the specific filing.
- Establish a formal response process for MFDS questions, including timelines, technical review, and approval of commitments.

The Korean applicant is often the operational bridge between MFDS and the overseas site. If responsibilities are not defined, questions may be delayed while the applicant requests documents from the manufacturer, or the manufacturer may provide technically correct material that does not answer the regulator's precise question. A written responsibility matrix, controlled question log, escalation route, and agreed response service levels reduce avoidable delay.

Why USFDA inspection not enough on its own

Inspection status and scope are time bound

An FDA inspection evaluates a defined facility and operational scope at a point in time. A satisfactory outcome is meaningful, but does not guarantee that every product, line, outsourced activity, or subsequent change has been assessed. FDA's published compliance framework considers inspection findings, reports, company responses, and other evidence before final classification [4]. Korean reviewers may need evidence tied to the API and site named in the Korean submission, not a general corporate statement that the company is 'USFDA approved'.

Different evidence packages

A Korean filing may require a specific GMP document, manufacturing-site information, API registration data, or an explanation of the relationship between the API file and the finished-product application. A US DMF or a customer's successful US filing does not automatically establish that the Korean applicant has access to the same version, that cross-references are authorized, or that the submitted content matches current commercial manufacture. Version control and letter-of-access arrangements are therefore critical.

Inspection observation and remediation

A site may have received an FDA Form 483, a VAI classification, or other observations that were addressed through corrective and preventive action (CAPA). Such history should be assessed transparently rather than hidden. The relevant question is whether the observation indicates a systemic weakness that could affect the API or Korean submission, whether root cause was established, and whether effectiveness was demonstrated. A polished CAPA summary without supporting trend data or effectiveness checks may not be persuasive.

Product and process differences

A facility can manufacture several APIs with different risk profiles, equipment trains, containment needs, and impurity controls. The evidence supporting one API does not automatically transfer to another. Shared equipment, cross-contamination controls, cleaning validation, campaign planning, and segregation should be explained in a manner appropriate to the product and site. Where a Korean filing involves a new route, new site, new starting-material supplier, or a process not represented in prior inspections, additional questions are foreseeable.

Regulatory convergence is not Regulatory identity

PIC/S participation supports cooperation and convergence in GMP inspection approaches, but local laws, administrative procedures, product registration rules, and decisions remain jurisdiction-specific. It is therefore inaccurate to frame Korea's requirements simply as 'PIC/S approval'. The more precise approach is to identify the current MFDS rule, applicable PIC/S GMP principles, ICH Q7 controls, and the evidence required for the particular API.

TECHNICAL AND QUALITY SYSTEM ISSUES TO WATCH

Data integrity and electronic records

Data integrity is a system property, not merely a software feature. API laboratories should be able to demonstrate that chromatographic data, audit trails, integrations, calculations, reinjections, deleted results, and access permissions are controlled and reviewable. Common risk areas include shared user accounts, incomplete audit-trail review, uncontrolled spreadsheets, undocumented manual integrations, weak backup restoration testing, and failure to investigate atypical results. Korean-market readiness requires a consistent narrative linking data governance policy, procedures, training, technical controls, and actual records.

Impurity control and analytical lifecycle

The API control strategy should address process-related impurities, residual solvents, elemental impurities where relevant, mutagenic impurities when applicable, degradation products, and impurities introduced by raw materials or reprocessing. Risk assessment must be scientifically justified and connected to process knowledge, analytical capability, and specifications. A method validation report alone may not explain why the method is suitable for the intended purpose, how out-of-trend results are handled, or how analytical changes are bridged to historical data.

Starting material and supply chain transparency

Starting-material selection affects both process understanding and impurity carry-through. Weaknesses can arise when the proposed starting material is insufficiently justified, suppliers are qualified only by questionnaire, changes are not communicated promptly, or traceability is lost through intermediaries. Manufacturers should maintain approved supplier lists, quality agreements, risk-based audits, incoming material controls, change notification obligations, and a documented rationale for critical starting-material boundaries.

Validation, Cleaning and continued verification

A robust validation program should include process validation or an appropriately justified validation strategy, cleaning validation, analytical method validation/verification, equipment qualification, and ongoing monitoring. One-time validation batches do not prove perpetual control. Trending of yields, impurity profiles, deviations, reprocessing, environmental or utility data where relevant, and batch rejection rates helps show whether the process remains in a state of control.

Change control and regulatory commitments

Changes to sites, equipment, process parameters, starting materials, specifications, test methods, packaging, or critical suppliers can have both technical and regulatory consequences. A global change-control procedure should include a Korean-market impact assessment, assessment of dossier consistency, customer notification, and a decision on whether prior approval or notification is required. A change approved for one market must not be assumed to be acceptable in Korea without checking the applicable rule.

Outsourcing and quality agreements

Contract laboratories, micronisation providers, sterilization vendors, warehouses, and intermediate manufacturers can affect the API quality chain. Responsibilities for deviations, OOS investigations, data access, audit rights, retention samples, complaints, recalls, and change notification should be explicit. Outsourcing does not remove the manufacturer's responsibility to understand and control the quality impact.

Dossier consistency and preparation for inspection

Good preparation begins with making sure that everyone is working from the same current version of the Korean API file. The dossier, manufacturing instructions, batch records, specifications, validation reports, analytical methods, stability data, and quality agreements should all tell the same story. Problems can arise when regulatory affairs relies on an older process description, quality assurance has already updated an SOP, or production is using a revised instruction that has not yet been reflected in the submission.

Readiness of Dossier

- Site identity and scope: legal name, address, manufacturing activities, quality contacts, and relevant site history.

- GMP evidence: current documents accepted for the Korean pathway, inspection history, response summaries, and status of any open commitments.
- API technical package: route and process narrative, starting materials, critical steps, in-process controls, specifications, analytical methods, impurity rationale, and batch data.
- Quality-system evidence: deviations, CAPA, change control, complaints/recalls, supplier qualification, training, data integrity, and management review.
- Lifecycle controls: current document versions, regulatory commitments, change impact assessments, and a mechanism to inform the Korean applicant.

A mock inspection should test evidence retrieval, not just interview performance. Auditors can select a batch and trace it backward from release results to raw data, reagents, reference standards, equipment status, training, material receipt, supplier approval, and manufacturing records. They should then trace a deviation forward through investigation, CAPA, batch disposition, trend analysis, and effectiveness checks. The exercise should include electronic data and audit trails, not only printed summaries.

Responding to regulatory questions

1. Log the question exactly as received and identify the specific dossier section or quality system implicated.
2. Assign a technical owner and a regulatory lead; define the response deadline and approvers.
3. Perform a documented fact check against source records and the current approved process.
4. Answer the question directly, then provide concise evidence and cross-references; avoid unrelated narrative.
5. Assess whether the answer reveals a broader dossier or quality-system inconsistency requiring correction.
6. Approve, translate where needed, submit through the local applicant, and retain the final response and supporting evidence.

A common failure mode is to treat each question as an isolated document request. Repeated questions about the same topic may indicate that the original explanation, risk assessment, or evidence structure is not sufficiently clear.

RESULTS AND DISCUSSION

Differences in Regulatory Requirements

The study highlights that South Korea has its own regulatory requirements for API registration and GMP evaluation. Although PIC/S and ICH guidelines help harmonize pharmaceutical quality standards across countries, certain differences remain in national regulations, documentation, and registration procedures.

For Indian pharmaceutical manufacturers, it is therefore important to understand the specific requirements of the South Korean Ministry of Food and Drug Safety (MFDS) before starting the registration process. Having experience in supplying APIs to the United States does not automatically mean that the same documentation and regulatory approach will be accepted in South Korea. Manufacturers must carefully review the applicable Korean requirements and prepare their submissions accordingly.

Limitations of USFDA Inspection History

A satisfactory USFDA inspection record is an important achievement for a pharmaceutical manufacturer, as it reflects the site's efforts to maintain quality and comply with regulatory expectations. However, it does not guarantee that another regulatory authority will automatically accept the same inspection history.

The scope of an inspection, the manufacturing activities covered, the nature of the API, and the effectiveness of corrective and preventive actions (CAPA) may all influence the assessment. Additional questions may arise if the Korean application involves a different API, a new manufacturing process, another production site, or changes in critical starting materials. To address these concerns, manufacturers should maintain complete inspection records and provide clear evidence that identified issues have been properly investigated and corrected.

Technical Documentation and Dossier Consistency

Maintaining consistency in regulatory documentation is another important challenge for Indian API manufacturers. When the information submitted in a dossier does not match the actual manufacturing process or current quality records, regulators may request further clarification, which can delay the review process.

The API dossier should accurately reflect the manufacturing instructions, batch records, specifications, analytical methods, validation reports, stability data, and relevant quality agreements used at the manufacturing site. Keeping these documents updated and properly controlled helps prevent discrepancies. It is equally important for the Indian manufacturer and the Korean applicant to work with the same approved versions of the documents throughout the registration process.

Data Integrity and Impurity Control

Data integrity and impurity control are essential for demonstrating the reliability and quality of an API. Manufacturers need to ensure that laboratory data are accurate, complete, traceable, and protected from unauthorized changes or loss.

Particular attention should be given to chromatographic records, electronic data, audit trails, user access, and the investigation of unusual or unexpected results. Any

identified issues should be properly documented and investigated.

In addition, manufacturers should establish suitable impurity control strategies based on the nature of the API and its manufacturing process. This includes assessing process-related impurities, residual solvents, degradation products, and other relevant impurities. Appropriate analytical methods and scientifically justified risk assessments can help demonstrate that the API consistently meets its required quality standards.

Starting-Material Traceability and Supplier Qualification

The quality of an API is closely linked to the quality of the materials used in its manufacture. For this reason, starting-material selection, supplier qualification, and supply-chain traceability require careful attention.

Problems may arise when suppliers are not adequately assessed, the selection of starting materials is not sufficiently justified, or changes in suppliers are not communicated in a timely manner. Such gaps can make it difficult to demonstrate consistent control over the manufacturing process.

Indian manufacturers should maintain an approved supplier list, conduct risk-based supplier assessments, establish appropriate quality agreements, and implement suitable incoming material controls. Proper documentation and traceability can help ensure that the materials used in production meet the required quality standards and that any changes can be identified and assessed promptly.

Validation and Change Management

Validation plays an important role in demonstrating that manufacturing processes and supporting systems can consistently produce APIs of the required quality. However, validation should not be considered a one-time activity. Continued monitoring is necessary to confirm that processes remain under control during routine production.

Manufacturers should maintain appropriate process and cleaning validation, equipment qualification, and analytical method validation or verification records. Regular review of manufacturing performance and quality trends can also help identify potential problems before they become significant.

Changes to manufacturing sites, equipment, starting materials, process parameters, specifications, or analytical methods should be carefully assessed and documented. In particular, manufacturers should evaluate whether a proposed change affects the information submitted to MFDS or requires notification or approval under the applicable Korean requirements. Acceptance of a change in the United States should not automatically be assumed to mean that the same change is acceptable in South Korea.

Coordination Between Indian Manufacturers and Korean Applicants

Good coordination between Indian API manufacturers and their Korean applicants is essential for a smooth registration process. Even when the manufacturing site has the necessary technical information, delays can occur if responsibilities are unclear, documents are incomplete, or regulatory questions are not answered promptly.

To avoid these difficulties, both parties should clearly define their responsibilities and establish a systematic process for managing regulatory queries. Assigning specific contacts, maintaining a record of questions and responses, and agreeing on response timelines can improve communication and reduce unnecessary delays.

When MFDS raises a question, the response should address the issue directly and be supported by relevant technical documents or quality records. Close cooperation between the manufacturer and the Korean applicant can help ensure that the information provided is accurate, consistent, and submitted within the required timeframe.

Conclusion

For Indian API manufacturers, a USFDA inspection history is a valuable part of the compliance story, but it should not be treated as automatic authorization to supply South Korea. Depending on the API and the applicable pathway, the Korean process may call for specific site information, suitable GMP evidence, a consistent technical dossier, and close coordination with the local applicant. PIC/S and ICH help establish shared principles, but they do not remove the need to meet Korean requirements or demonstrate that the manufacturing process remains under control.

A practical strategy is to confirm the regulatory pathway first, check the current MFDS requirements, review the API quality system against ICH Q7 and relevant Korean expectations, and compare the dossier with the records used in day-to-day manufacturing. Change control should also cover the impact on the Korean market. Particular attention is warranted for data integrity, impurity controls, supplier qualification, validation, and CAPA effectiveness, because these areas link what the dossier says with what the site actually does. No program can guarantee registration or eliminate every question, but careful preparation can prevent avoidable inconsistencies and help the company respond more clearly and efficiently.

References

1. Ministry of Food and Drug Safety (MFDS), Republic of Korea. “Approval Process — Drugs.” Available from: https://mfds.go.kr/eng/wpge/m_17/de011008l001.do .

2. Ministry of Food and Drug Safety (MFDS), Republic of Korea. "Regulation on the Registration of Active Pharmaceutical Ingredient" Available from: https://www.mfds.go.kr/eng/brd/m_18/view.do?seq=71515 .
3. U.S. Food and Drug Administration (FDA). "Is It Really 'FDA Approved'?" Consumer Update. Available from: https://www.fda.gov/consumers/consumer-updates/it-really-fda-approved .
4. U.S. Food and Drug Administration (FDA). "Pharmaceutical Inspections and Compliance." Available from: https://www.fda.gov/drugs/guidance-compliance-regulatory-information/pharmaceutical-inspections-and-compliance .
5. International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH). "Q7: Good Manufacturing Practice Guide for Active Pharmaceutical Ingredients." Available from: https://www.ich.org/page/quality-guidelines
6. Pharmaceutical Inspection Co-operation Scheme (PIC/S). "PIC/S" official website and guidance resources. Available from: https://picscheme.org/ .
7. U.S. Food and Drug Administration (FDA). "Current Good Manufacturing Practice Declarations." Available from: https://www.fda.gov/drugs/human-drug-exports/current-good-manufacturing-practice-declarations .
8. Prasanna Gayathri B , Kamaraj R. Pharmaceutical Inspection Co-operation Scheme: An Overview.TheCureus Journal of Medical Science.2024, 6(9), DOI: 10.7759/cureus.69043
9. Kim Jeong-yeon, Kwon Kyung-hee. Comparative Study of Pharmaceutical Inspection Cooperation Scheme (PIC/S) and Korea's GMP for Securing International Quality Competitiveness of Pharmaceuticals.Journal of the Korean Pharmaceutical Society 2013,57(6), 432-441, DOI:10.7354/yk.2013.57.6.432