intertek
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IN-VITRO BIOEQUIVALENCE FOR GENERIC NASAL PRODUCTS

COST-EFFECTIVE APPROACHES TO BIOEQUIVALENCE

Inclusion of data generated through morphologically-directed Raman spectroscopy (MDRS), can support a cost-effective and efficient approach to generic nasal product development.

Challenges to achieving generic nasal product development

Companies bringing generic, off-patent nasal medicines to market are required to conduct potentially costly bioequivalence studies to ensure the safety and efficacy of their products. For the US market, where a weight of evidence approach has historically been required, this has often involved clinical endpoint (PD) studies, which are both expensive and time-consuming.

It is even more difficult to gain approval without PD data for locally acting nasal sprays as it is often impossible to accurately conduct pK studies, placing more emphasis on the in-vitro data generated.

However, advances in analytical technology has meant that the U.S. Food & Drug Administration (FDA) Centre for Drug Evaluation and Research (CDER) were able to grant approval to Apotex's abbreviated new drug application (ANDA) for Mometasone Furoate nasal spray without PD data[1]. The article in reference 1 describes how the approval hinged on Apotex's use of morphologically directed Raman spectroscopy (MDRS) data as part of the submission. This test was included along with the in-vitro BE tests set out in the guidance for this product and together, meant that a strong enough package of data was presented to satisfy the authorities that no clinical endpoint study should be performed.

Meeting regulatory requirements through cost-effective and efficient approaches, such as the inclusion of MDRS data, is of huge interest to generics developers and should support the development and approval of more generic nasal products in the future.

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ANDAs APPROVED BY THE FDA FOR NASAL PRODUCTS IN 2016

A greater number of nasal and orally inhaled product ANDAs were approved by the US FDA in 2016 than in 2015 and 2014 combined.

Our cost-effective and efficient solutions

Intertek has invested in Malvern Instruments' Morphologi G3-ID, which uses morphologically-directed Raman spectroscopy (MDRS), allowing direct measurement of active pharmaceutical ingredient (API) particle size in the nasal suspension. This was previously difficult to achieve without the Raman function as excipient particles are often a similar size and shape to the API particles.

MDRS allows Raman spectra to be produced for selected particles, with this additional chemical information providing robust identification of both the drug and the excipient particles by Raman spectra. We apply this technology to the generation of robust data to support a weight-of-evidence approach to in vitro bioequivalence studies for locally acting nasal spray products

Intertek's inhalation development expertise

Intertek's integrated formulation and analytical team for inhalation and nasal medicines apply their 20 years of experience to formulation development, method development and validation, analytical testing, solubility screening, drug-excipient compatibility, stability testing and device selection support.

Through our Total Quality Assurance expertise, we consistently deliver with precision, pace and passion, enabling you to overcome challenges in respiratory development.

FOR MORE INFORMATION

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[1] 'FDA Embraces Emerging Technology for Bioequivalence Evaluation of Locally Acting Nasal Sprays'; Li Bing; June 2016