



Bertin Pharma, branch of Bertin Technologies-CNIM group, gathers 4 different entities:

- SPI-Bio & Biotec Centre
- Ellipse Pharmaceuticals & IDPS

No matter the challenge you are facing, a **single project manager** will assist you throughout your whole project **from screening of candidate drugs to manufacturing and distribution of clinical supplies**.

Our services are divided into 2 areas of expertise, **preclinical & clinical supplies and pharmaceutical development & clinical supplies**, and focus on:

Pharmaceutical development & clinical supplies

ADME & Immunogenicity

Biotransformation

Antiviral & Immune Pharmacology
Biosafety

Biomarkers

Explore your options with us



SPI-Bio, BIOTEC CENTRE, Ellipse & IDPS
BERTIN PHARMA BRANCH - CNIM GROUP

According to **ICH current guidelines**, the marketing authorisation application should include, in the proposed specifications, the product related substances observed during manufacturing and/or stability studies of a new drug product. Similarly, it should also summarise the actual and potential impurities most likely to arise during the synthesis, purification and storage of a new drug substance.

These impurities should respect **regulatory thresholds** according to the amount of drug substance administered per day. These values are presented in the tables below (ICH Q3A and Q3B, 2006):

Threshold for degradation products in new drug substances

Maximum daily dose	Reporting threshold	Identification threshold	Qualification threshold
≤ 2g/day	0.05%	0.10% or 1.0 mg	0.15% or 1.0 mg
> 2g/day	0.03%	0.05%	0.05%

Threshold for degradation products in new drug products

Maximum daily dose	Reporting threshold	Maximum daily dose	Identification threshold	Maximum daily dose	Qualification threshold
≤ 1g	0.1%	< 1 mg	1.0% or 5 µg TDI	< 10 mg	1.0% or 50 µg TDI
> 1g	0.05%	1 mg - 10 mg	0.5% or 20 µg TDI	10 mg - 100 mg	0.5% or 200 µg TDI
		> 10 mg - 2 g	0.2% or 2 mg TDI	> 100 mg - 2 g	0.2% or 3 mg TDI
		> 2 g	0.10%	> 2g	0.15%

Any impurity or degradation product observed during stability studies conducted at the recommended storage conditions or during any manufacturing step should be identified when present at a level greater than the indicated identification thresholds.

Our approach

Ellipse Pharmaceuticals offers a dedicated **platform** for the calibration, isolation, analysis and identification of impurities or degradation products present in the active substance or the finished dosage form.

Impurities (after enrichment or not) are extracted, separated and isolated. Then, purified products are **identified** by MS, MS/MS and NMR and used as standards to determine their amount.

Ellipse Pharmaceuticals provides the **structure** of the impurities, their **amount** in the active substance or finished dosage form and available **isolated impurities**.

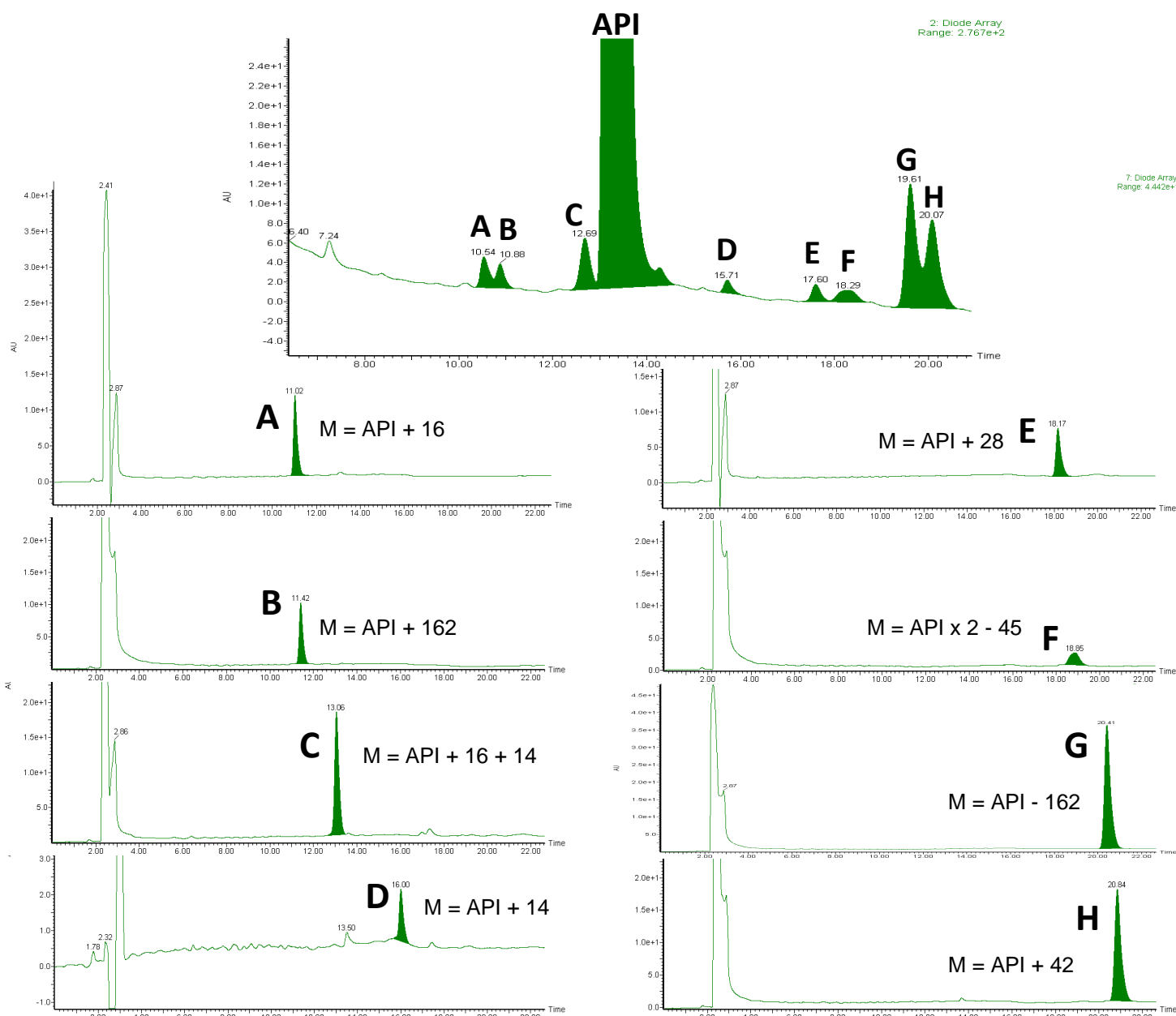


Tools

- Impurities enrichment: physico-chemical methods
- Analytical technologies: High Performance Liquid Chromatography (UV/visible detection, MS and MS/MS coupling), TLC
- Preparative Chromatography facilities: direct phase (silica gel chromatography) or reverse phase (HPLC using preparative column coupled to UV detection)
- Structure identification: ^1H and ^{13}C NMR (up to 500 MHz)

Application examples

Eight impurities (A - H) developed below the 0.05% range during the storage of an active pharmaceutical ingredient have been separated and isolated by preparative reverse phase chromatography, identified by MS and NMR and used for calibration studies.



Related services

Analytical services

Regulatory affairs