

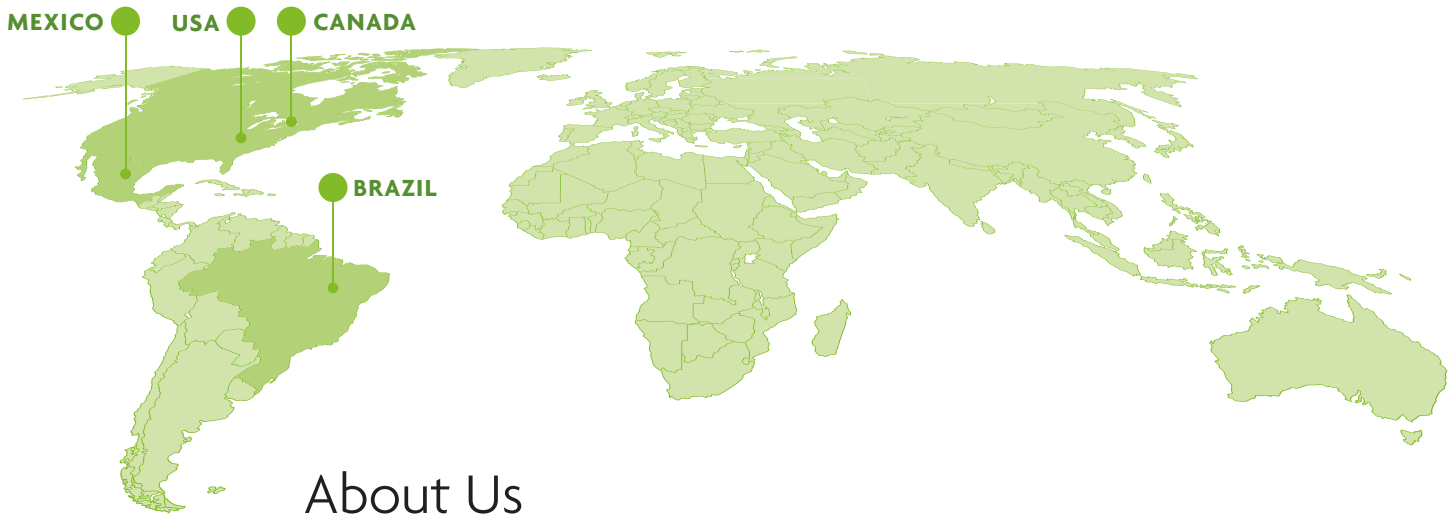
AXIOS RESEARCH

CORPORATE PROFILE



Your Research, our Passion.

AXIOS
RESEARCH



About Us

- Axios Research is based out of Toronto, Canada, and is led by industry experts with the vision of providing high quality reference standards, research chemicals, and exceptional services to the scientific community.
- The Axios Research leadership team is comprised of scientists and business executives with over 100 years of combined experience.
- Since its inception, Axios Research has experienced tremendous growth along with an increase brand awareness. The organization is well positioned to continue its path of success in serving and to continue growing in international markets.

Vision and Mission Statement

VISION

Axios Research vision is to become the world's trusted partner for research & development in support of improving quality of life.

MISSION

To provide uncompromising high quality reference standards and related services, that exceed the international market requirements.



Why work with Axios?

- **Well Characterized High Quality Compounds**

Every product offered by Axios is extensively tested for purity and structure confirmation, and purity and comes accompanied with a detailed certificate of analysis. Axios guarantees reliable and accurate testing.

- **Experienced Scientific Team**

Axios' consulting and project management team help support our client goals. We aim to take the burden off their shoulders.

- **Customer Support**

Comprehensive technical as well as logistics support and updates are routinely provided to customers

Products provided by Axios Research are for **research purposes only** and are not considered for human and animal use.

What Axios offers

- **Catalogue Products**

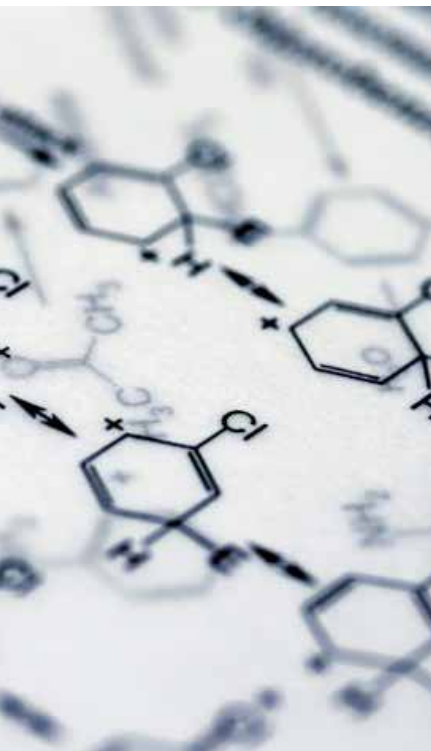
- a) Reference standards
- b) Building Blocks
- c) Isotopically Labelled Compounds

- **Custom Synthesis**

Axios' experienced team is skillful in route scouting and route optimization for GMP and non-GMP products

- **Services**

- a) Isolation and structure elucidation of unknown drug impurities
- b) Single crystal X-ray to confirm the structure
- c) Characterization and detailed certification of the Reference standards



Product Specifications

Unless otherwise specified the following product specifications are used:

API REFERENCE STANDARDS:

HPLC purity \geq 98.0 %

Potency (Purity as is basis) \geq 95.0 %

IMPURITY REFERENCE STANDARDS:

HPLC purity \geq 95.0 %

Potency (Purity as is basis) \geq 90.0 %

ISOTOPICALLY LABELED REFERENCE STANDARDS:

HPLC chemical purity \geq 98.0 %

Isotopic Purity \geq 98.0 % (mass spectroscopy)

Certificate of Analysis

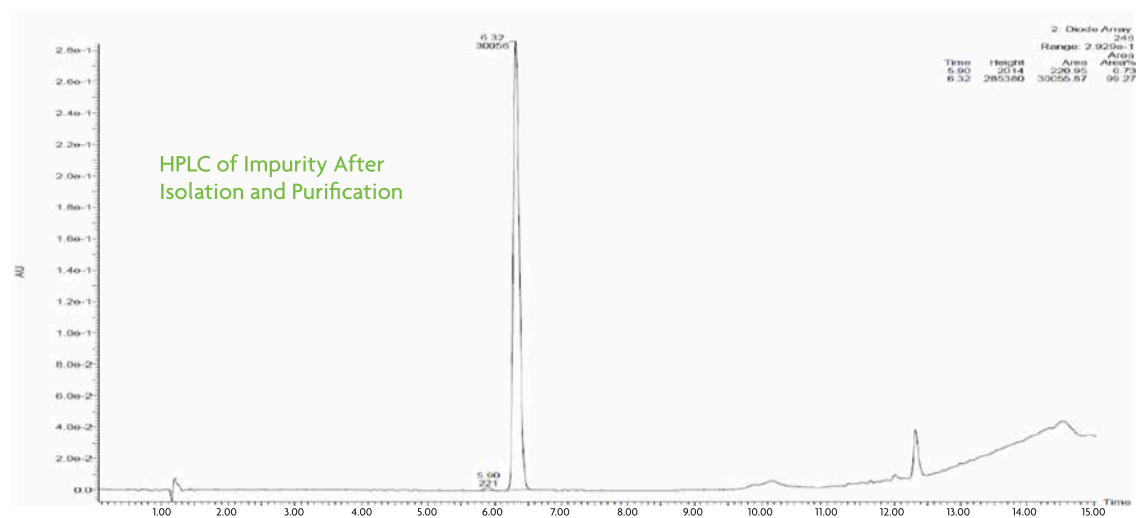
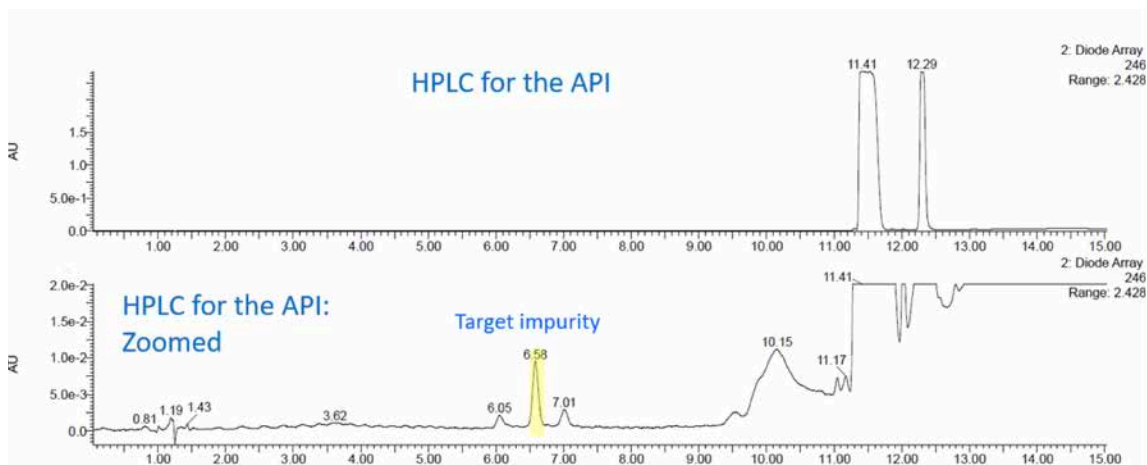
Axios Research is proud to provide analytical testing above market standards with each CoA containing the following tests:

- **NMR:** 1 H NMR (min 500 MHz), 13C NMR. If required, the structure is confirmed by 2D-NMR analysis
- **Mass Spectra:** EIMS is generally used for analysis, if required HRMS or MS/MS can be performed
- **HPLC:** A novel method is developed to determine the purity of each compound
- **IR Spectra:** Provided with assignment of key functional group signals
- **Thermo Gravimetric Analysis (TGA):** Is performed by heating from room temperature to 900°C to determine volatile contents and inorganics present in the product
- **KF Titration:** Water content analysis performed on low melting products not suitable for volatile determination by TGA
- **Ion Chromatography or ICPMS:** Cation and anion content determination is performed when applicable
- **Optical Rotation/ee determination:** Provided wherever applicable for chiral compounds

Impurity Isolation & Elucidation Service

- Impurities may be formed in low concentrations during API manufacturing, formulation, and stability studies
- Impurities can originate from degradation, residual intermediates used during synthesis, packaging leachables, unknown contamination, and unwanted by products of side reactions
- As per ICH Q3A (R2)* guidelines, it is required that impurities are isolated and identified
- Under a CDA, Axios Research can selectively isolate unknown impurities from customer samples or through a forced degradation process
- After isolation, the unknown impurity is rigorously analyzed by various analytical techniques to confirm the chemical structure
- A detailed report is included with a step-by-step protocol for purification, and all analytical data that supports the identity of the unknown impurity
- Any remaining isolated impurity will be sent to the customer and if required, additional material can be produced synthetically

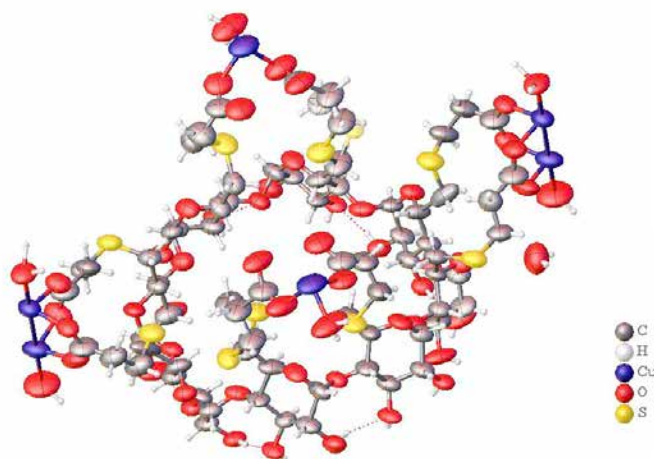
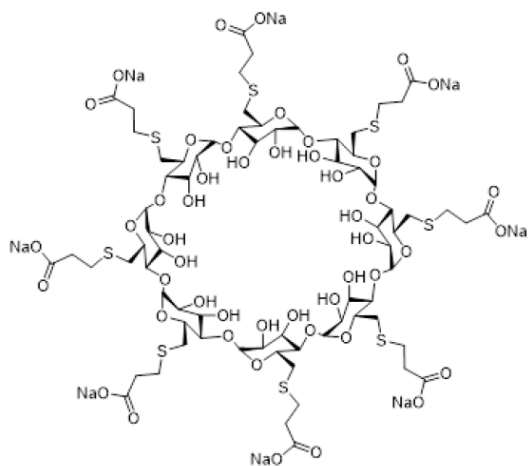
**ICH Q3A (R2) International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH), Q3A (R2): Impurities in new drug substances need to be below a certain limit.*



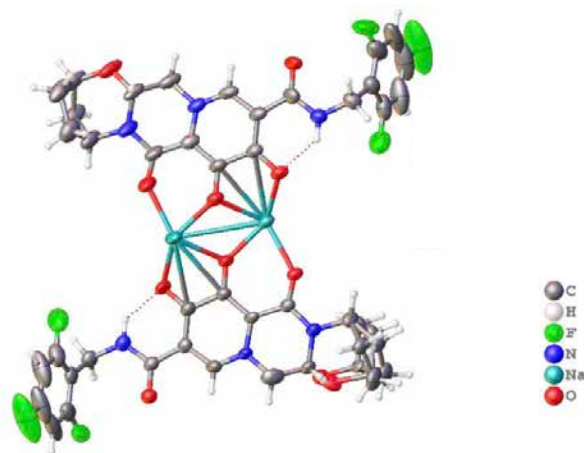
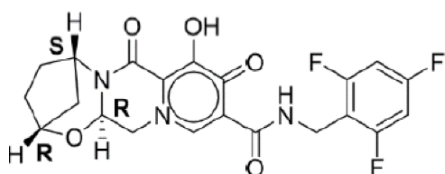
X-Ray Crystallography Services

To confirm the structure of a compound unambiguously, Axios can provide the single crystal x-ray.

Sugammadex sodium



Bictegravir



Weighing

- Axios Research weighs and packages products as per customer requirement
- Products are supplied in amber conical vials to minimize product loss during transfers
- If required, exact weight packaging can be offered, up to five decimal places, with weigh slips provided for each product
- The weighing balances are calibrated in accordance with the current revisions of ASTM E617 and OIMLR111. The calibration also meets specifications as outlined in ISO/IEC 17025, ANSI/NCSL Z540-1-1994.



Packaging & Shipping

- Axios Research ships worldwide via FedEx. Customers have the option to choose their own carrier or freight forwarder
- All products are packed in a Styrofoam insulated cardboard box with ice packs. Vials within the box are ziplocked with silica dry packs and further protected within a screw top plastic jar





AXIOS RESEARCH

THANK YOU



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Your Research, our Passion.

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