



Arxspan Notebook

- Transform your Scientific Data Recording Process with Arxspan® Notebook

Arxspan Notebook: The Enterprise Research Notebook

Migrate from paper-based laboratory notebooks to the Arxspan® Notebook electronic laboratory notebook and enjoy the benefits of an intuitive and easy to use ELN that is searchable and sharable, efficiently managing chemistry and biology data.

Flexibly manage your scientific workflows while never losing track of your data:

- Securely store data in one central repository
- Record and protect intellectual property
- Share knowledge legibly across the entire organization
- Seamlessly share information with outside partners
- Comprehensively search and find all research data
- Manage workflow and work requests

For Chemistry

Chemists enjoy the ease of use of industry-standard ChemDraw™ for drawing and representation of chemical structures and reactions. Details of reactants and products, such as systematic name, chemical formula, molecular weight, and more are automatically populated via ChemAxon chemical intelligence into a stoichiometry table beneath the reaction. Chemical searching, parallel synthesis, defined vocabulary lists, CAS number look-ups, compound tracking, and regulatory checks on compounds are available in chemistry experiments.

Overview	Conditions	Product	Equivalents	Theoretical Mass	Actual Mass	Theoretical Moles	Actual Moles	Yield	Inventory Items
	(1) ethyl (3R,4R)-4-aminopiperidine-3-carboxylate	ethyl (3R,4R)-4-acetamidopiperidine-3-carboxylate	1	96.2 g	91.9 g	0.73 mmol			
	acetyl acetate								

- Access your experiments from any device at any location
- Adhere to regulatory standards
- Sign and witness experiments
- Store all MS Office, image, analytical, and instrument files
- Generate reports with the push of a button
- Create custom experiments and templates
- Integrate with other scientific workflows

For Biology

Biologists can enter information in free-text sections or draw down preconfigured protocol or summary templates to document their experiments. Microsoft Office files, such as Word and Excel, can be attached to experiments. Push-button PDF-rendering of experiments yields free-text and file attachment data into a comprehensive report for downloading and sharing. Notes and comments can be added to experiments, images can be annotated, and common protocols can be templated for quick population of free-text boxes in biology experiments.

General cell adhesion protocol:

Coat a flat bottom plate (Corning-Costar EIA/RIA High Binding strepwell, #2592) with ligand. Generally 100µL of a 10µg/mL concentration will work but the proper coated concentration may need to be determined experimentally. Dilute ligand in PBS. Plates should then be sealed and placed at 40degC overnight.

After the overnight incubation, wash the plate 1x with PBS, 200µL per well. Add 200µL of PBS/10%BSA to each well. Allow to block for at least one hour. At this point plates can be resealed and returned to the refrigerator to be used at a later point if necessary.

Count the cells that you will be using. Once they are added to the assay you will need them at 4 x 10⁴ cells/mL. Count enough and for the labeling step suspend them in 1mL per 4 million cells in assay buffer (TBS with divalent cations** and 1% BSA). Add 2µL of Casein AM solution (4mM stock soln from Sigma) for each mL of cells. Incubate the cells + Casein for 20 minutes at 37degC.

After cell incubation, wash the cells 1x in assay buffer and re-suspend the cells at a concentration of 4 x 10⁵ cells/mL.

Prior to use, wash plate 2x with assay buffer to remove blocking buffer. Tap the plate on paper towels to remove excess assay buffer from the wash.

Dilute your sample or inhibitor of interest at 2x the desired concentration and add it to the plate in a 50µL volume (you are diluting this sample 1:2 when you add the cells).

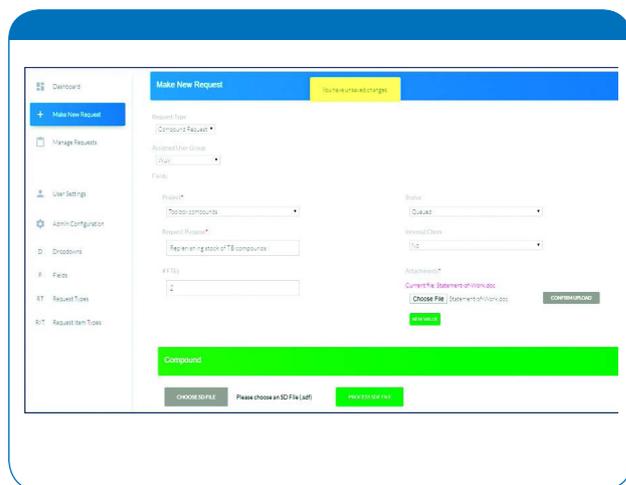
Add 50µL of the cell suspension to the plate and seal the plate. Place plate at 37degC incubator for 60 minutes.

bioRxiv preprint doi: <https://doi.org/10.1101/2020.03.10.388888>; this version posted March 10, 2020. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

● Component Functionality in Arxspan Notebook

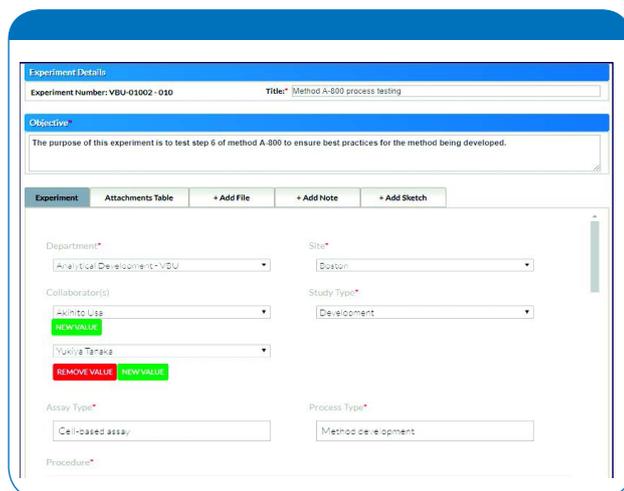
Component Functionality in Arxspan Notebook

Workflow – Project and Work Request Management
Arxspan Workflow is a comprehensive project and work request management system, allowing managers to oversee projects and activities, and to make work requests and track progress of these requests.



Custom Experiments Formatting Titles and Fields

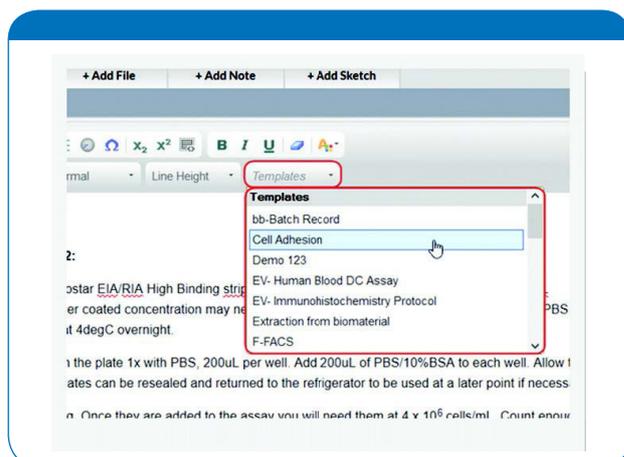
Custom experiments can be created, allowing users to change the names of experiments and experiment sections, as well as to create custom drop down, multiple entry, free text, and required fields.



Arxspan Notebook Features

Experiment Templates

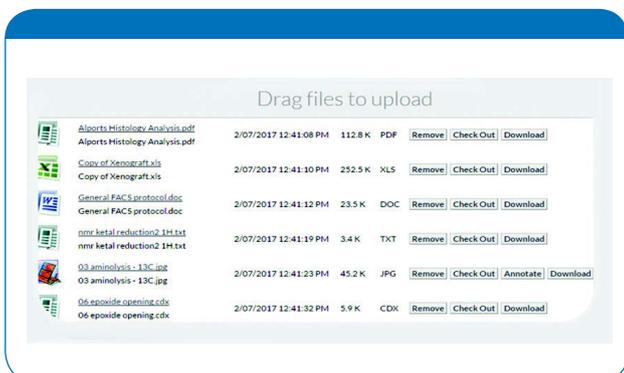
Custom templates can be created for chemistry and biology experiments, enabling population of experiments with commonly used protocols or standardized result formats.



Dragging & Dropping of File Attachments

Users can drag & drop files of any type:

- Word, Excel, and PowerPoint
- PDF
- JPG, GIF, TIF, and PNG
- Instrument
- Analytical
- Text



● Arxspan Notebook Features

Experiment History

Each experiment contains a history box for recording and posting a hard-saved copy of that experiment, complete with NIST date and time stamps. Prior hard-saved experiment versions in the history box are in uneditable form, for viewing the version of that experiment as it was at the time of saving.

History ▲

- ✓✓ 8/15/2014 04:22:55 PM **Successfully Witnessed**
- ✓ 8/15/2014 04:19:21 PM
- 📄 8/15/2014 04:17:51 PM
- ✗ 8/15/2014 04:17:04 PM **Rejected by PI**
- ✓ 8/15/2014 04:15:54 PM **Signed and Closed**
- 📄 8/15/2014 04:14:48 PM **Experiment Saved**
- 🔗 8/07/2014 07:05:53 AM **Experiment Created**

Notifications

Users can be notified of events and actions related to experiments, notebooks, and projects that they own or have access to. Notifications can be delivered into users' dashboards or via e-mail.

Notifications

- April 24, 2018
Experiment Witnessed: User Jane Biologist has witnessed [JMARTIN - 327](#)
- April 17, 2018
Project Invitation Accepted: User System Administrator has accepted your invitation to share Project [Moniz Project](#)
- March 27, 2018
Experiment Witnessed: User Jane Biologist has witnessed [AUSA3 - 732](#)
- February 27, 2018
Experiment Witnessed: User Jane Biologist has witnessed [JCARTER - 611](#)
- June 28, 2017
Project Invitation Accepted: User Jane Biologist has accepted your invitation to share Project [A new project](#)

Signing and Witnessing Capability

Signing and witnessing of experiments is a standard feature. Multiple witnesses can be selected for any experiment, witness reminder alerts can be scheduled, and experiments can be rejected, with reasons noted in the rejected experiment.

Sign Experiment

Email:

Password:

Status: Sign and Close ▼

Witness: Jane Biologist ▼

Checking this box and entering your password indicates that you have performed the work as described.

Sign Cancel

Multi-Step Experiments

All experiments have a next step functionality, allowing users to create follow on chemistry, biology, or analysis experiments in order to chronicle multi-step synthetic processes or follow up with analytical assays.

CCOC(=O)C1=CC=C(O)C(O)=C1 → CCOC(=O)C1=CC=C(O)C(O)=C1

Upload Combi Add Next Step

● Benefits of using Arxspan Notebook

Transform your Scientific Data Recording Process with Arxspan Notebook

The Arxspan Notebook is a cloud-based ELN, serving as an authoritative repository for chemistry and biology data and optimized for the collaborative research models present in today's commercial and academic research environments. With an intuitive interface, Arxspan Notebook requires no software other than your web browser and provides a full-featured, cross-platform user experience across Windows, Mac, Android, and iOS mobile operating systems.



Ease of Use

- Support for chemistry and biology experiments and workflows
- Keyword, advanced, and chemical searching
- Template creation for common protocols and experiments
- Attachment and in-line editing for all Microsoft Office, image, and instrument files
- Server-based generation of PDF reports of experimental data

Sharing of Data Internally and Externally

- Cloud-based system accessible from any browser
- View and/or write sharing capabilities at notebook and project level
- Configurable user role and permission hierarchies
- Group auto-share notebooks
- CRO data access and input management

Integration with Other Systems and Software

- Out of box integration with legacy ELN systems
- Native integration with PerkinElmer ChemDraw®
- Underlying ChemAxon chemical intelligence
- Enterprise capability
- Single sign-on (SSO) capabilities

Infrastructure and Data Security

- Global cloud software - no software to install or update
- No need for servers and/or database purchases
- Secure, audited data facility and procedures
- Regular client data backups available
- System updated every six weeks

Legal and Regulatory Compliance

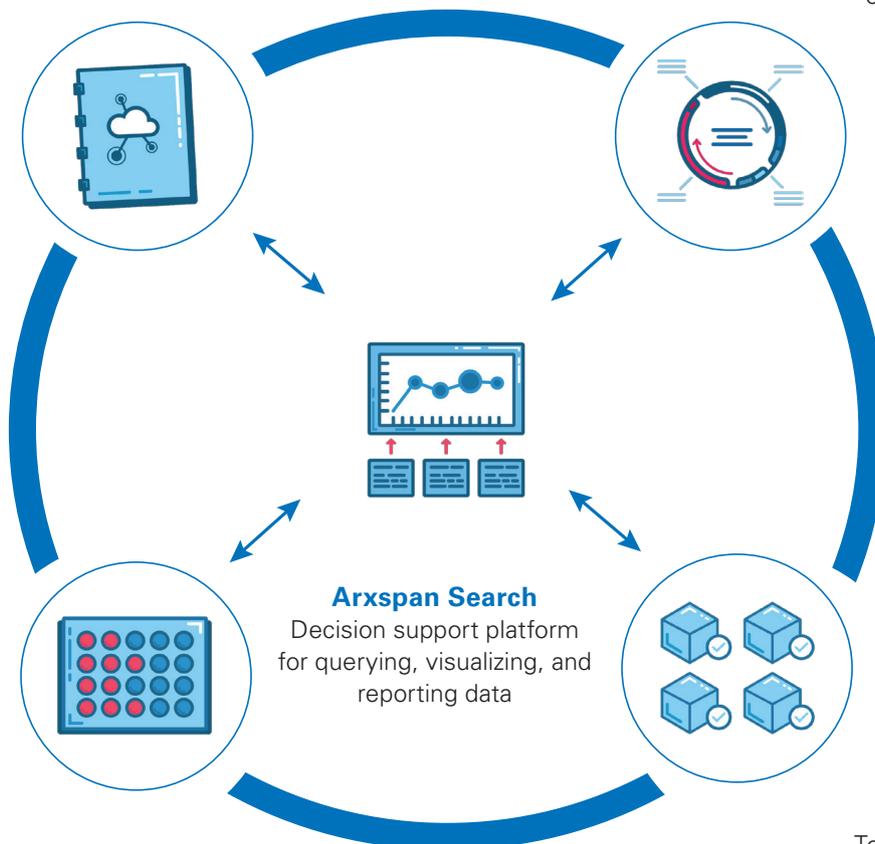
- 21 CFR Part 11 compliant
- Experiment audit trails and user/activity logs
- Experiment signing and witnessing workflows
- SAFE BioPharma compatibility for multi-factor capabilities
- Support or validation of system and system updates

Notebook

Electronic Laboratory Notebook optimized for collaborative research environments

Arxspan Registration

Chemical and biological repositories handling cases of uniqueness & identity criteria, mixtures, and cross-referencing



Arxspan Search

Decision support platform for querying, visualizing, and reporting data

Arxspan Assay

System for analysis and reporting of assay result sets and endpoint data

Arxspan Inventory

Tool to define and manage compounds, biologics, and other materials



info@arxspan.com
www.bruker.com/products/laboratory-software.html