

RC-AID
User Manual

BBK Technology

Version 1.1

RC-AID

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RC-AID Red Cell Antibody Identification

1. Site Inventory displayed
2. Menu bar
3. Change user password
4. Log out of site inventory (returns to RCAID.net homepage)

The screenshot shows the RC-AID web application interface. At the top, there is a header bar with the site name 'Test Site A' and user information 'TEST@RCAID.NET (User Settings) [Sign Off]'. Below this is a navigation menu with buttons for 'Site Users', 'Add New Cells', 'Manage Cell Inventory', 'Select Cells', and 'Process Selections'. The main content area is titled 'Select Cells From Test Site A Inventory'. It features search filters for 'Lot #' and 'Testing Medium: All'. Below the filters is a grid of antigen selection buttons for various blood group systems: Rh-hr, MNSs, P, Lewis, Lutheran, Kell, Duffy, and Kidd. A table below the grid displays the results, with columns for Lot #, Vial, ID, and various antigens. The table includes rows for different cell codes and their corresponding antigen profiles. Callouts 1-4 point to the header, menu, and search filters. Callouts 5-12 point to the search filters, antigen buttons, and table elements.

Lot #	Vial	ID	D	C	E	c	e	f	C ^w	V	M	N	S	s	P ₁	Le ^a	Le ^b	Lu ^a	Lu ^b	K	k	Kp ^a	Kp ^b	J _s ^a	J _s ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Xg ^a	Blanked		
09301	06	F338	0	0	+	+	+	+	0	0	+	+	0	+	+	0	+	0	+	0	+	0	+	0	+	0	0	+	+	0	+	3%	<input type="checkbox"/>
VRA127	06	303762	0	0	+	+	+	+	0	0	+	+	0	+	+	0	0	+	0	+	0	+	0	+	0	+	+	+	+	+	0.8%	<input type="checkbox"/>	
08290	06	F186	0	0	+	+	+	+	0	0	0	0	+	0	+	+	0	0	0	0	+	0	+	0	+	0	+	+	0	+	3%	<input type="checkbox"/>	
08290	12	F648	0	0	+	+	+	+	0	0	+	+	0	+	+	0	0	0	0	0	+	0	+	0	+	0	+	+	0	+	3%	<input type="checkbox"/>	
791011	06	304151	0	0	+	+	+	+	0	0	0	0	+	0	+	s	+	0	0	0	0	+	+	0	+	0	+	0	+	+	3%	<input type="checkbox"/>	
RB258	21	303982	0	0	+	+	+	+	0	0	+	+	+	+	S	0	+	0	+	0	+	0	+	0	+	+	+	+	+	+	3%	<input type="checkbox"/>	
VR4126	06	304883	0	0	+	+	+	+	0	0	+	0	0	+	0	+	0	0	+	0	+	0	+	0	+	0	0	+	+	0	+	0.8%	<input type="checkbox"/>
VR4125	06	303924	0	0	+	+	+	+	0	0	0	0	+	0	+	s	0	+	0	+	0	+	0	+	0	+	0	0	+	+	0.8%	<input type="checkbox"/>	
VR4124	06	304883	0	0	+	+	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	+	0	0	+	+	0.8%	<input type="checkbox"/>	

5. Search by lot
6. Rh-hr automatic search
7. Select testing medium to display
8. Individual antigen search
9. Clear all search parameters
10. Select row checkboxes
11. Clear all selections
12. Duplicate cell code

2. LOG IN

- 2.1 Log in. Log in to RC-AID at www.RCAID.net with your username and password.
- 2.2 Default site. The default site inventory associated with your username and password will automatically display.

3 USER ROLES

3.1 RC-AID has three user levels.

- Site user with access to inventory search and selection, the basic functionality of RC-AID. Site users have the ability to search and select from site inventory, run rule out analysis and print worksheets. No changes or additions to the database are allowed with this user level. Site user logins can be generic, offering easy access to routine users.
- Site inventory managers add red cells to inventory, import lots from RC-AID Master Inventory, edit and delete cells from inventory.
- Site administrators add, update and delete users at all levels.

	Site User	Site Inventory Manager	Site Administrator
Inventory search/selection	X	X	X
Manage inventory		X	X
Manage site users			X

3.2 BBK Technology recommends each site have a backup inventory manager and backup site administrator.

4 **MANAGE USERS**

4.1 Site administrator. Those users with the role of Site Administrator have the capability to add, update and delete users.

4.2 Change password. To change a password, click <User Settings> on the top line of the RC-AID screen. Enter the current password and the new password twice and click <Change Password>.

NOTE: Lost passwords and locked user ID's can only be reset by BBK Technology. Contact us at support@rcaid.net. Alternatively, Site Administrators can delete and re-enter a user login, effectively resetting the password.

4.3 User maintenance. To begin user maintenance, select <Site Users> on the top menu bar.

4.3.1 Add users. To add users, click <new user>. Enter

1. First name (required)
2. Last name (optional)
3. User id (required)
4. A password the user can change later (required). The password must be at least 6 characters long.
5. Their work title (optional)
6. Check this user is active (required to make the user field active)

4.3.2 Maintain users. To update a user's information, click pencil icon on the far right of the user line. Make the necessary changes to the user information. Click green checkmark to save changes, red X to discard changes.

4.3.3 Delete users. To delete a user, click trash can icon on the far right of the user line. RC-AID states 'Deletion is permanent. Are you sure?' Click <Yes>.

4.3.4 Change user role: To change user access level, double click user, modify access level, click <Save>.

5 SEARCH AND SELECTION

Although all login levels have the Site User capability, it is recommended that only Site User logins are used for routine search and selection to protect the integrity of the database.

5.1 Inventory Search and Selection:

The entire inventory is listed and will be searched.

5.1.1 Begin inventory search. To begin the search, select <Select Cells> on the top menu bar. The reagent red cell display is changed with the search controls.

5.1.2 Search Display.

- The Selection Display displays cells in order of expiration date, regardless of media type.
- In-dated lots have the Lot Number and Vial in bold.
- Donor cells that have a fresher donor cell in the inventory are shaded pink.

5.1.3 Searching your inventory.

Red cell inventory can be searched and the list of matches limited to any combination of the following.

1. Lot number

2. Testing medium

Selecting cells from multiple media types can be done by making selections from one medium, then changing the media display and selecting additional cells or leaving the default setting of all media.

3. Rh-hr designation

The Rh-hr search screens by antigenic pattern only, not actual phenotype (e.g. a R1R1 search would display cells with the DCE pattern, which includes cells with the R1r' phenotype.)

4. Any combination of antigenic criteria

5.1.4 Selecting cells. As the display changes, click the check box at the end of each row to select a specific red cell for testing. A tally of the number of cells selected is displayed directly above the list of cells. All cells listed can be selected easily by clicking the check box in the header row at the top of the selection grid.

5.1.5 Displaying Selected Cells. After cell selections are complete, click <Process Selection>. A screen will appear with only the selected rows displayed.

5.2 Analysis

RC-AID will evaluate homozygous and heterozygous rule outs using all cells selected.

5.2.1 Initiating analysis. To begin analysis, click <Process Selections>. The cells you have selected will be displayed

5.2.2 Identified antibodies. Under the heading, 'Antibody(ies) Suspected or Previously Identified', check the boxes of any identified or suspected antibodies. Any selected cells positive for the checked identified or suspected antibodies will not be included in the rule out analysis.

5.2.3 Run analysis. Analysis is run on the selected cells. Click <Run Analysis>.

5.2.4 Rule Out Analysis.

- RC-AID will evaluate rule outs of all other antibodies using cells

negative for those antigens checked as suspected or previously identified.

- If no antibody is identified and analysis is requested for the purpose of ruling out all common antibodies, select only those cells giving a negative test result for analysis. Any unexplained positive reactions will invalidate analysis results.
- Homozygous rule outs appear on the first line of the analysis. Heterozygous rule outs, if applicable, appear on the second line.
- Antigen rule out analysis is shaded as follows:
 - Red no rule outs
 - Yellow one (1) rule out
 - Green two (2) or more rule outs
 - Blue suspected or previously identified antibody
- A printout of RC-AID rule out analysis is not supported.

NOTE: Rule outs must be closely evaluated in the context of actual results. RC-AID analysis does not take the place of manual assessment of testing results.

5.3 Worksheet:

5.3.1 Initiating the Worksheet. Click <Process Selections> menu option.

A list of the cells you have selected for your worksheet will be displayed.

5.3.2 Heading information. Patient information can be entered on the provided screen. Date collected and tested will default to today's date but can be changed from this screen. This information is for worksheet legibility only and will not be saved. RC-AID does not save any worksheets or patient data. Users may choose to save worksheets on-site in PDF format.

5.3.3 Print worksheet. Click <Generate Worksheet> to print the worksheet.

5.3.4 Coversheet

The coversheet option is for sites that find it helpful to print a second page for documentation of patient history, medications, additional testing (DAT, A1 Lectin, etc) or any information necessary for completing the testing and review process. Like the worksheet, patient information is used for legibility only and this document is not saved or recorded by RC-AID.

5.4 Clearing selections

Manually clear the selections by clicking the <Clear Selections> control.

6 **MANAGE INVENTORY**

Access to inventory management is restricted based on user level, as defined by the Site Administrator. Log into RC-AID, using a username and password with Site Inventory Manager status or higher. From the Search screen, menu options for inventory management will appear in the menu bar.

6.1 Manually adding red cell reagent lots

6.1.1 Initiating Add Lot. Click <Add New Cells> on the top menu.

6.1.2 Enter lot data. Enter lot number, select the supplier, select the testing medium, and enter the outdate from the calendar.

6.1.3 Create lot. Click <Create Lot>. RC-AID will write the lot information to the file and present a form to enter one cell.

6.1.4 Enter cell data.

- Vial. Vial designation must be entered to clarify lot information (ie. I, II and III for screen cells).
- Donor code. From the supplier antigen, enter the donor code for the first cell in the lot and press the <tab> key.
 - Donor copy. RC-AID will search the database for any instance of that donor code. If the donor code is available, the antigenic profile will auto-fill. Any changes to the antigenic profile (additional special antigen typings, etc) can be entered at this time, however the antigenic pattern of the pre-existing cell will not change.
- Antigen entry. If no instance of the donor code is located, the cursor will appear in the first field for manual entry.
- Rh-hr. If the Rh-hr designation is available, enter it. Rh-hr is

not a required field.

- Common antigens. Enter the remaining antigenic profile.
The only acceptable entries are "0", "+", "S", "W" and blank.
- Special antigens. Specials antigens can be entered by clicking the appropriate box.
- Complete cell entry.
 1. When the cell information has been entered, click <Add cell>.
 2. The added cell will appear below the lot information and a form will appear for entry of the next cell.

6.1.5 Add remaining cells. Continue add cells to the lot until complete.

6.1.6 Validation. Since the printout of entered cells is not in the same order as the suppliers, validation of entries is most easily done by comparing antigen columns.

6.2 Import of lots:

The import of lots from RC-AID's master inventory is an optional feature. If links to the following areas do not appear or do not operate as expected, contact RC-AID at admin@rcaid.net or support@rcaid.net.

6.2.1 Initiate import. From the Add Cells screen, select <Import Lot from RC-AID Inventory>.

6.2.2 Import lot.

- Select the supplier and lot number.
- Click <Import This Lot> in last column. Lot will be imported from RC-AID Master inventory and a message will appear.

- If the lot already exists in the site inventory, the lot will not import and a message will appear.

6.2.3 Finding your lot. Display of lots can be changed by double-clicking the column headers to change the sorting parameters. A triangle pointing up or down in the header indicates the lots are sorted in descending or ascending order by the information in that column.

NOTE: After entering or importing cells to your site inventory, it is recommended that the added cells are printed and manually verified against the supplier product insert. This validation is essential to the integrity of the inventory and should be saved as documentation.

6.2.4 Validation. Validation of entries is most easily done by comparing antigen columns, since the printout of entered cells may not be in the same order as the suppliers.

6.3 Edit inventory

6.3.1 Initiate Edit Inventory. When additions or corrections to cells in the site inventory are necessary, click <Manage Cell Inventory> at the top of the RC-AID screen. The site inventory lots will display, in descending order of outdate.

6.3.2 Finding lots. The lot display can be changed by clicking the column headers to change sort parameters.

6.3.3 Edit lot. To edit lot specific information, click the <pencil> at the beginning of the row of the lot.

- Lot label, supplier, medium, and outdate can be changed from this screen.
- Click the <pencil> to edit the lot information
- Click the <green check mark> after making the edits.
- Click the <red X> to cancel without making any changes.

6.3.4 View a lot's cells. To edit a specific cell information, click <+> at the beginning of the lot. The row will expand to display all cells contained in the lot.

6.3.5 Edit a cell. Click the pencil icon at the beginning of the cell to be edited. Vial number, cell code, Rh-hr, antigen pattern and special antigens can be edited from this screen. To save changes, click <Update>. Clicking <Cancel> will return to the previous display without saving changes.

6.4 Delete Inventory

Deletions from the site inventory are done from the Manage Cell Inventory screen. Using the same navigation techniques as for editing, locate the lot/cell to be deleted. Click the <trashcan> in the last column of the row. The lot or cell is deleted from the inventory.

7.0 Special Techniques

7.1 Using rule-out analysis on unknown/initial panel testing.

7.1.1 Select cells. Select any cells giving negative reactions.

7.1.2 Run analysis. Click on <Process Selections> and <Run Analysis>.

The rule out analysis will appear.

7.1.3 Evaluation. Closely evaluate any antigens with no rule-outs.

Remember to consider any antigens displaying no homozygous rule-outs to potentially have the corresponding antibody, since dosage would allow heterozygous rule outs to appear.