SOP: SP077.1
Updated 7/28/23 by KCB

Reading a BCA Using the BioTek Plate Reader

Materials and Reagents:
1. Sample plate
2. BioTek plate reader
3. Gen5 software

Protocol:

1._____ Turn BioTek plate reader on and wait for the self-diagnostic cycle to complete.

2._____ Log in to the attached computer, and open the Gen5 3.04 software from the desktop.

3._____ From the open Task Manager, click on Read Now, then select a basic "BCA Template.prt" under Recent (or in Existing Protocols if not seen under Recent, note 1).

4._____ Enter your name and a plate description at the prompt.

5._____ Insert your plate and then click OK. The reader will automatically read all wells (you will have a chance to define your wells later).

6._____ REMOVE YOUR PLATE and then click OK.

7._____ You can choose whether or not to save your experiment. If this is your first time using the Gen5 software, you should save in case you need assistance with your analysis.

8._____ On the top left side of the program window navigation panel: click on "Plate Layout". This task window will allow you to assign samples and blanks to specific wells on the plate.

9._____ <u>The standards and blank are already inserted in the layout. If you need to rearrange</u>:

- Click on <Empty> on the left side of the plate layout window, then click and drag over all wells to be erased.
- Click on the first standard.
- If your standards are arranged from 0.1-2, you can click and drag to fill.
- If your standards are arranged from 2-0.1, then you will have to click on each and add to your template individually.
- Click on BLK and place your blank on the template.

10._____ <u>To define your samples</u>:

- Click on the dilution factor on the left side of the plate layout window
- Click on the appropriate well in the template. The program will auto-fill duplicates for you (you can change the number of replicates as needed at the bottom of the window, and the orientation of the duplicates).
- If you are using all of the dilutions indicated, you can click and drag and the program will auto-fill for you.
- If you are only using a selection of the dilutions indicated, or your dilution factors are different than the ones already selected, unselect Next Dil. at the bottom of the window. Double click on the

sample dilutions on the left of the window and then edit the number of samples you have or change the dilution factors of your samples.

11._____ When your plate template is arranged as you want it, click OK.

12._____ To name your sample(s), click on Sample IDs on the left side navigation panel. Enter your sample name(s), then click OK.

13._____ Click on the Print Preview icon on the toolbar.

14._____ If you are satisfied with your results, click on the Print Icon.

15._____ When you close the program, it will give you several save options:

- Save your Experiment if you choose.
- **DO NOT UPDATE PROTOCOL**. This will make your changes apply to all future uses of the Basic BCA Template, and this protocol is intended to be generic for all users.
- You can **Save As** if you want your own protocol/template that is more specific to your needs.
- You can **Ignore** to close without saving protocol changes.

16._____ Take your printout and TURN OFF THE PLATE READER.

Notes:

1. There are a number of BCA protocols both locally on the PC and online. The basic template protocol, if you are unable to find it on local folders, is also located on SharePoint. Under the "Lab" Tab, there is a folder named "BCA protocols", and the basic BCA .prt file is located there as well.