Dear Dr. Wu,

Thank you for your careful consideration of our revised manuscript. We have made modifications to the manuscript and supporting information as per your requests. Below is our detailed response to each request. Changes have been tracked in the manuscript and supporting information files.

**Editorial comments:**  
  
The manuscript has been modified and the updated manuscript, **58428\_R1.docx**, is attached and located in your Editorial Manager account. **Please use the updated version to make your revisions.**  
  
1. Please take this opportunity to thoroughly proofread the manuscript to ensure that there are no spelling or grammar issues.

We have carefully proofread the manuscript.

2. Please highlight less than 2.75 pages of protocol steps (including spacing and headings) for filming.

We have modified the grouping of a couple of protocol steps to make slight reduction in overall length of highlighted regions. We have checked that the new length is within 2.75 pages (using the current formatting/margins ).

3. Please remove the embedded Table from the manuscript. All tables should be uploaded separately to your Editorial Manager account in the form of an .xls or .xlsx file. Each table must be accompanied by a title and a description after the Representative Results of the manuscript text.

We have moved the table to a separate file, and moved the caption to a ‘TABLE LEGENDS’ section after the ‘REPRESENTATIVE RESULTS’.

4. Author Affiliation: What is SOFIE or UCLA? Please define the abbreviation before use.

SOFIE is not an abbreviation; the company just spells it will all capital letters. We have spelled out the first use of UCLA (University of California, Los Angeles) in the manuscript and supporting information.

5. For steps that are done using software, a step-wise description of software usage must be included in the step. Please mention what button is clicked on in the software, or which menu items need to be selected to perform the step. Please revise the following steps: 1.2.2.1-2.2.4, 1.2.3.1-1.2.3.2, 1.3.1-1.3.3,

We have made the following changes:

For steps 1.2.2.1-1.2.2.3 (1.2.2.1-1.2.2.2 in the new version), we have clarified that these are done with paper and pen, not software.

For step 1.2.2.4 (1.2.2.3 in the new version), it would be very repetitive and lengthy (many additional pages) to write out the full details. For each unit operation identified in Figure 2C, there would be a drag-and-drop operation, then multiple button clicks to set the parameter values for that operation. Programming involves repeating these steps for all unit operations. Will this be okay as is? For the video, we can show in detail how to program the first few of the operations perhaps? This will give the reader enough idea how to perform programming of the entire synthesis (or to generalize it to synthesize other PET tracers). Happy to modify if you have other suggestions here.

For 1.2.3.1, this would require the same steps as 2.1-2.3. I have indicated this in the step.

For 1.2.3.2, we have given more detail how this would be accomplished.

For 1.3.1-1.3.3, these may or may not be performed with software, depending on the particular radio-HPLC and other instruments that the researcher has in their lab. They are complex steps, potentially involving identifying unknown impurities, purchasing or preparing standards for desired compound and impurities, tuning of separation conditions to achieve the desired resolution (developing the method), and then establishing repeatability, linearity, and detection limits (validating the method), and iterating if repeatability, linearity, or detection limit criteria are not met. That being said, the techniques for performing these tasks are well-established in analytical chemistry.

6. 2.4.4: Please add more details to your protocol steps. Please ensure you answer the “how” question, i.e., how is the step performed?

We have added a lot more detail for this step. We have also elected to unhighlight this section.

7. Please provide a title for the supplementary file.

We have used the title “Supplementary Material”. Is this acceptable? We have updated this when uploading the new files.