**S1 Table.**Pump wavelengths corresponding to the Raman shifts of interest for CARS imaging, and SRS hyperspectral interrogation at the C-H stretching band and at the higher frequency region of the fingerprint band.

|  |  |  |
| --- | --- | --- |
|  | **pump (nm)** | **Raman Shift (cm-1)** |
| CARS | 817 | 2845 |
| SRS:CH | 820-803 | 2800-3050 |
| SRS: Fingerprint | 912-904 | 1565-1665 |