

Journal Name

ARTICLE

Supporting information

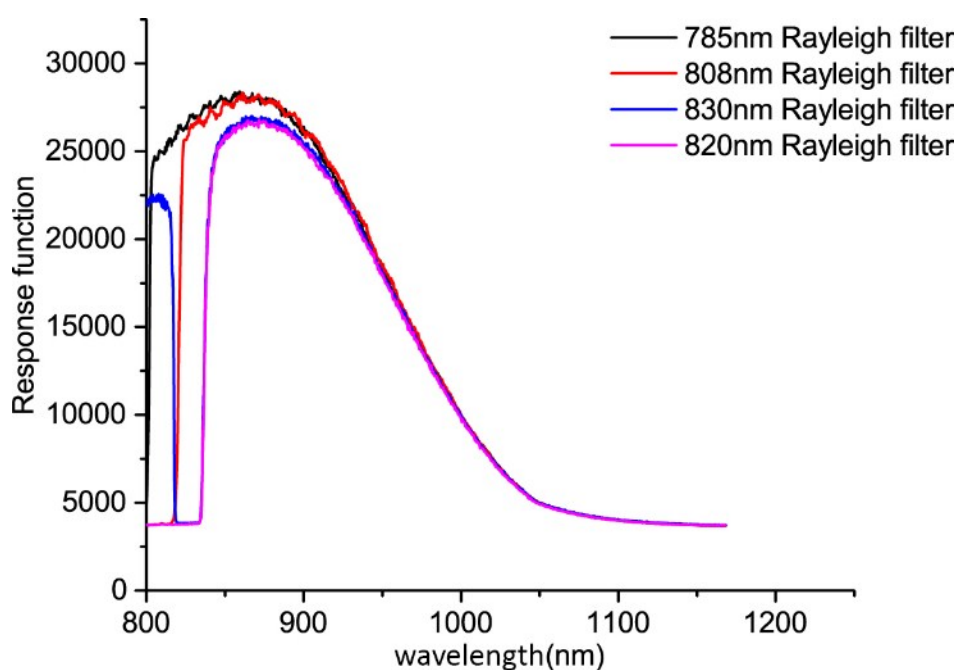


Figure S1 instruments response function including the intermediary optics used. Each one of the plot corresponds to a long pass filter used to reject laser scattering at different wavelengths.

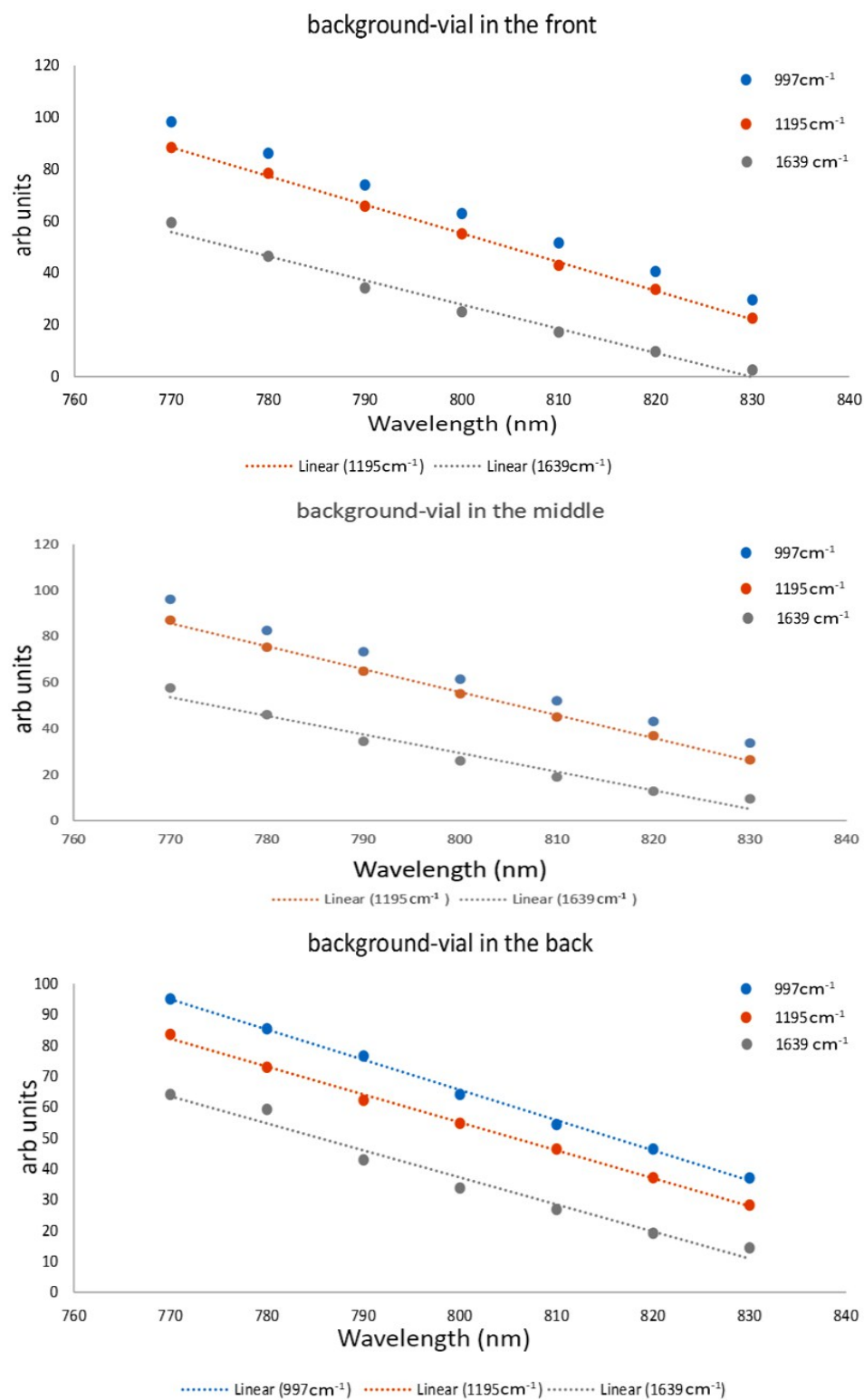


Figure S2 noise background level next to the Raman peaks model for each vial position front, middle and back.

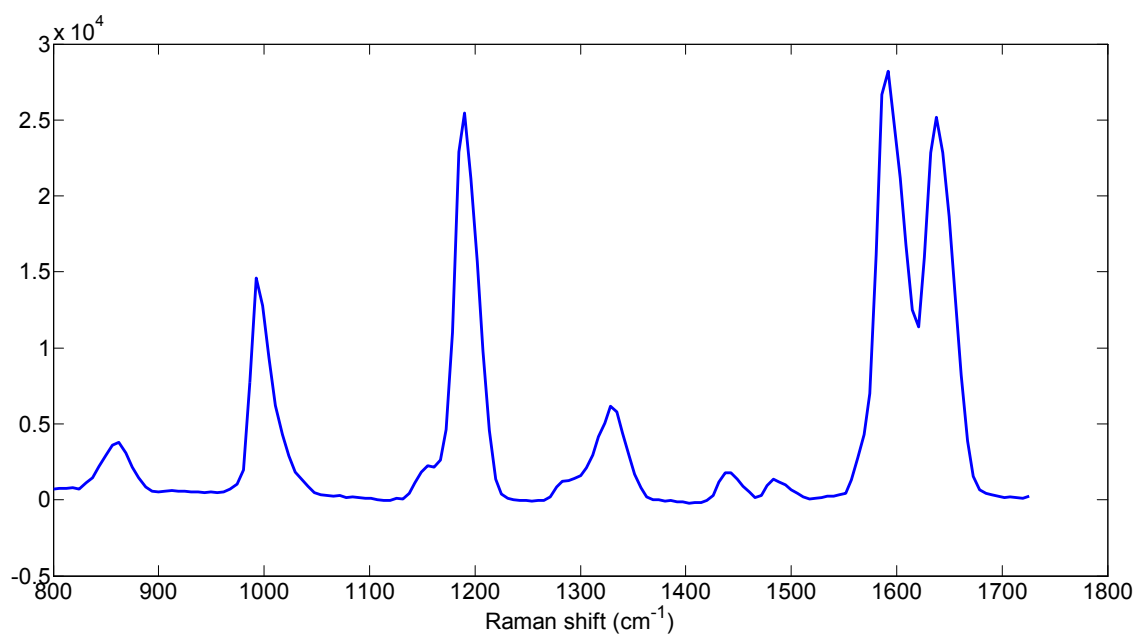


Figure S3 Raman spectra of pure trans-tilbene.

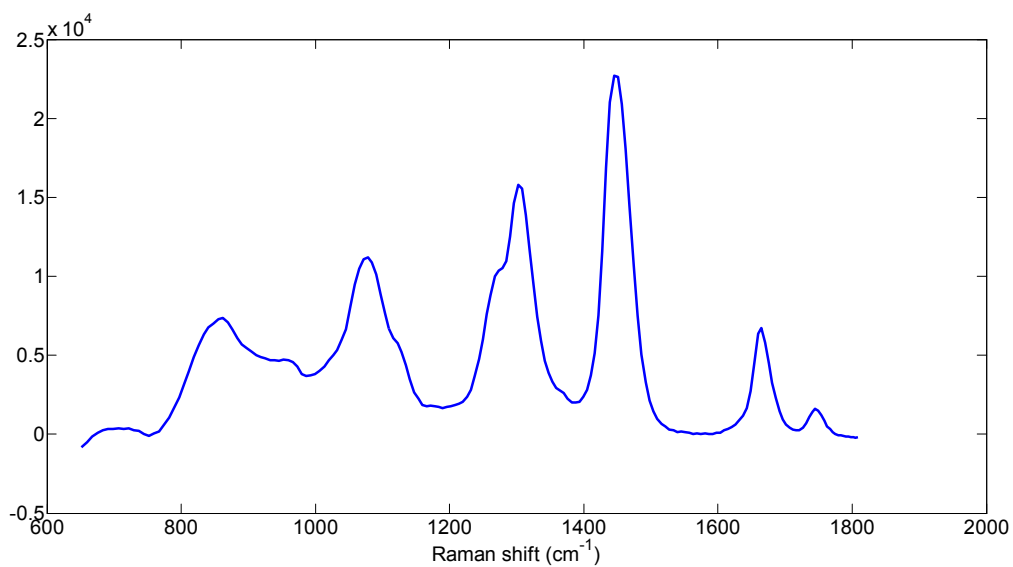


Figure S4 Raman spectra of pure porcine tissue.

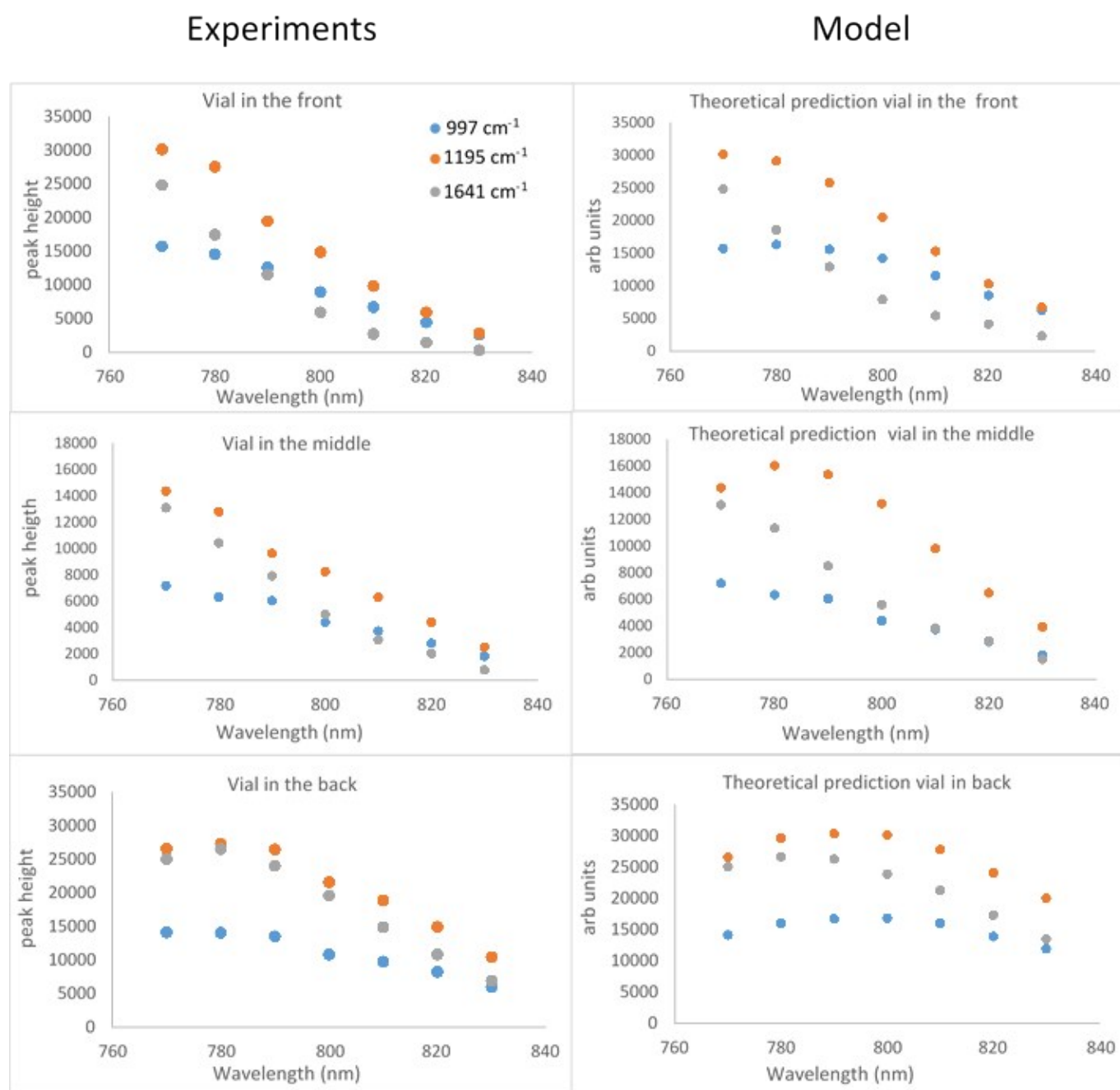


Figure S5 Experimental Raman peak height vs laser wavelength for each position of the vial [left hand side] inside the tissue along their theoretical predictions of Raman peak height (right hand side)

References

1. J. Ferlay, I. Soerjomataram, R. Dikshit, S. Eser, C. Mathers, M. Rebelo, D. M. Parkin, D. Forman and F. Bray, *Int J Cancer*, 2015, **136**, E359-E386.
2. A. J. Murray and D. M. Davies, *Surgery (Oxford)*, 2013, **31**, 1-3.
3. C. M. Checka, J. E. Chun, F. R. Schnabel, J. Lee and H. Toth, *AJR. American journal of roentgenology*, 2012, **198**, W292-295.
4. D. S. Buist, P. L. Porter, C. Lehman, S. H. Taplin and E. White, *Journal of the National Cancer Institute*, 2004, **96**, 1432-1440.
5. J. G. Fujimoto, C. Pitris, S. A. Boppart and M. E. Brezinski, *Neoplasia*, 2000, **2**, 9-25.
6. L. H. V. Wang and S. Hu, *Science*, 2012, **335**, 1458-1462.
7. D. J. Hall, J. C. Hebden and D. T. Delpy, *Appl Optics*, 1997, **36**, 7270-7276.
8. T. Yates, J. C. Hebden, A. Gibson, N. Everdell, S. R. Arridge and M. Douek, *Physics in medicine and biology*, 2005, **50**, 2503-2517.
9. C. M. Busing, U. Keppler and V. Menges, *Virchows Arch A*, 1981, **393**, 307-313.
10. V. Barth, E. D. Franz and A. Scholl, *Die Naturwissenschaften*, 1977, **64**, 278-279.
11. O. Hassler, *Cancer*, 1969, **23**, 1103-1109.
12. G. J. Puppels, F. F. M. Demul, C. Otto, J. Greve, M. Robertnicoud, D. J. Arndtjovin and T. M. Jovin, *Nature*, 1990, **347**, 301-303.
13. W. Kiefer and S. Schlücker, *Surface enhanced Raman spectroscopy: analytical, biophysical and life science applications*, John Wiley & Sons, 2011.
14. E. Smith and G. Dent, *Modern Raman spectroscopy: a practical approach*, John Wiley & Sons, 2013.
15. P. Vandenabeele, *Practical Raman spectroscopy: an introduction*, John Wiley & Sons, 2013.
16. J. Smith, C. Kendall, A. Sammon, J. Christie-Brown and N. Stone, *Technol Cancer Res T*, 2003, **2**, 327-331.
17. K. Kong, C. J. Rowlands, S. Varma, W. Perkins, I. H. Leach, A. A. Koloydenko, H. C. Williams and I. Notingher, *Proceedings of the National Academy of Sciences of the United States of America*, 2013, **110**, 15189-15194.
18. M. Larraona-Puy, A. Ghita, A. Zoladek, W. Perkins, S. Varma, I. H. Leach, A. A. Koloydenko, H. Williams and I. Notingher, *J Mol Struct*, 2011, **993**, 57-61.
19. C. Kendall, N. Stone, N. Shepherd, K. Geboes, B. Warren, R. Bennett and H. Barr, *The Journal of pathology*, 2003, **200**, 602-609.
20. N. Stone, P. Stavroulaki, C. Kendall, M. Birchall and H. Barr, *The Laryngoscope*, 2000, **110**, 1756-1763.
21. P. Crow, N. Stone, C. A. Kendall, J. S. Uff, J. A. M. Farmer, H. Barr and M. P. J. Wright, *Brit J Cancer*, 2003, **89**, 106-108.
22. K. Kong, C. Kendall, N. Stone and I. Notingher, *Adv Drug Deliv Rev*, 2015, **89**, 121-134.
23. A. S. Haka, K. E. Shafer-Peltier, M. Fitzmaurice, J. Crowe, R. R. Dasari and M. S. Feld, *Proceedings of the National Academy of Sciences of the United States of America*, 2005, **102**, 12371-12376.
24. J. C. C. Day and N. Stone, *Appl Spectrosc*, 2013, **67**, 349-354.
25. J. C. C. Day, R. Bennett, B. Smith, C. Kendall, J. Hutchings, G. M. Meaden, C. Born, S. Yu and N. Stone, *Physics in medicine and biology*, 2009, **54**, 7077-7087.
26. C. Reble, I. Gersonde, S. Andree, H. J. Eichler and J. Helfmann, *Journal of biomedical optics*, 2010, **15**, 037016.
27. R. Baker, P. Matousek, K. L. Ronayne, A. W. Parker, K. Rogers and N. Stone, *The Analyst*, 2007, **132**, 48-53.
28. P. Matousek, I. P. Clark, E. R. C. Draper, M. D. Morris, A. E. Goodship, N. Overall, M. Towrie, W. F. Finney and A. W. Parker, *Appl Spectrosc*, 2005, **59**, 393-400.
29. P. Matousek, *Appl Spectrosc*, 2006, **60**, 1341-1347.
30. P. Matousek, *Chemical Society reviews*, 2007, **36**, 1292-1304.
31. P. Matousek and A. W. Parker, *Appl Spectrosc*, 2006, **60**, 1353-1357.
32. P. Matousek and N. Stone, *Journal of biomedical optics*, 2007, **12**, 024008.
33. C. Eliasson, N. A. Macleod and P. Matousek, *Anal Chem*, 2007, **79**, 8185-8189.
34. C. V. Raman and K. S. Krishnan, *Nature*, 1928, **121**, 501-502.
35. N. Stone and P. Matousek, *Cancer research*, 2008, **68**, 4424-4430.
36. M. V. Schulmerich, J. H. Cole, K. A. Dooley, M. D. Morris, J. M. Kreider, S. A. Goldstein, S. Srinivasan and B. W. Pogue, *Journal of biomedical optics*, 2008, **13**, 020506.
37. J. L. H. Demers, F. W. L. Esmonde-White, K. A. Esmonde-White, M. D. Morris and B. W. Pogue, *Biomed Opt Express*, 2015, **6**, 793-806.
38. E. M. Kanter, E. Vargis, S. Majumder, M. D. Keller, E. Woeste, G. G. Rao and A. Mahadevan-Jansen, *J Biophotonics*, 2009, **2**, 81-90.
39. A. S. Haka, Z. Volynskaya, J. A. Gardecki, J. Nazemi, R. Shenk, N. Wang, R. R. Dasari, M. Fitzmaurice and M. S. Feld, *Journal of biomedical optics*, 2009, **14**, 054023.
40. A. S. Haka, Z. Volynskaya, J. A. Gardecki, J. Nazemi, J. Lyons, D. Hicks, M. Fitzmaurice, R. R. Dasari, J. P. Crowe and M. S. Feld, *Cancer research*, 2006, **66**, 3317-3322.
41. Z. Meic and H. Gusten, *Spectrochim Acta A*, 1978, **34**, 101-111.
42. A. T. Tu, *Raman spectroscopy in biology: principles and applications*, Wiley, 1982.
43. R. Li, D. Verreault, A. Payne, C. L. Hitchcock, S. P. Povoski, E. W. Martin and H. C. Allen, *J Raman Spectrosc*, 2014, **45**, 773-780.
44. C. J. Frank, D. C. B. Redd, T. S. Gansler and R. L. McCreery, *Anal Chem*, 1994, **66**, 319-326.