



Cite this: *Analyst*, 2020, **145**, 4699

## Correction: Confocal Raman microspectroscopy for skin characterization: a comparative study between human skin and pig skin

Sana Tfaili,<sup>a</sup> Cyril Gobinet,<sup>a</sup> Gwendal Josse,<sup>b</sup> Jean-François Angiboust,<sup>a</sup> Michel Manfait<sup>a</sup> and Olivier Piot<sup>\*a</sup>

DOI: 10.1039/d0an90060e

rsc.li/analyst

Correction for 'Confocal Raman microspectroscopy for skin characterization: a comparative study between human skin and pig skin' by Sana Tfaili *et al.*, *Analyst*, 2012, **137**, 3673–3682, DOI: 10.1039/C2AN16292J.

The authors regret that the assignment of the Raman vibration at 1047 cm<sup>-1</sup> in Table 2 is incorrect in the original article. The correct version of Table 2 is shown below.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

**Table 2** Raman band assignment<sup>a</sup>

SC surface		SC/epidermis		Epidermis		Assignment
Transkin	Pig skin	Transkin	Pig skin	Transkin	Pig skin	
	427					Cholesterol <sup>12</sup>
459	457	457		457		Polysaccharides <sup>13</sup>
	486	486		486		Glycogen <sup>14</sup>
	519	519				Phospholipids <sup>13</sup>
	529	529		527		$\nu$ (S–S) in keratin, $\nu$ (S–S) disulfide in proteins, <sup>14,15</sup> ceramides, <sup>16</sup> $\nu$ (S–S) <i>gauche-gauche-trans</i> (amino acid cysteine) <sup>17</sup>
546	545	541		543		Glucose–saccharide band, cholesterol <sup>17</sup>
	564	564		564		Polysaccharides <sup>13</sup>
		582		582		$\delta$ OH out of plane <sup>18</sup>
		597		597		Phospholipids <sup>17</sup>
		605	607	605		Glycerol <sup>17</sup>
				619		$\gamma$ <sub>t</sub> C–C (protein) <sup>19</sup>
624	622	624	622	624		$\gamma$ <sub>t</sub> C–C mode of phenylalanine (proteins) <sup>14,15,20</sup>
	646	646		646		$\gamma$ <sub>t</sub> C–C mode of tyrosine, cysteine <sup>12</sup>
	667	667		667		T, G (DNA/RNA) <sup>20</sup>
	701	701		701		$\nu$ (C–S) <i>trans</i> (amino acid methionine), <sup>21</sup> cholesterol, cholesterol ester <sup>17</sup>
	724	722		724		DNA <sup>22</sup>
	745	747	749	749		T (ring breathing mode of DNA/RNA bases), <sup>19</sup> DNA, <sup>22</sup> symmetric breathing of tryptophan (protein assignment) <sup>12,14,15,23</sup>
	803	803		803		Uracil-based ring breathing mode <sup>24</sup>
829	828	828	826	828	827	Out-of-plane ring breathing, tyrosine (1 <sup>st</sup> peak of the Fermi doublet), <sup>14,15</sup> phosphodiester, <sup>25</sup> $\nu$ O–P–O DNA/RNA <sup>20</sup>
	854	854		854		Tyrosine (1 <sup>st</sup> peak of the Fermi doublet) and polysaccharide <sup>26</sup>
	897	898		896	898	Saccharide band, <sup>17</sup> monosaccharides ( $\beta$ -glucose), (C–O–C) skeletal mode, <sup>25</sup> phosphodiester, deoxyribose <sup>21</sup>
		930				$\nu$ (C–C), probably in amino acids (protein band) <sup>27</sup>
936	937	937		936	937	$\nu$ (C–C), $\alpha$ -helix (proteins), amino acid side chain vibrations <sup>12</sup>
	987	987		983		$\nu$ (C–C), $\beta$ -sheet (proteins) <sup>20</sup>
	1003	1003		1003		Phenylalanine <sup>12</sup>

<sup>a</sup>MéDIAN Unit, CNRS UMR 6237, Faculty of Pharmacy, University of Reims Champagne – Ardenne (URCA), 51 rue Cognacq Jay, 51096 Reims, France.

E-mail: [olivier.piot@univ-reims.fr](mailto:olivier.piot@univ-reims.fr), [sanatfayli@hotmail.com](mailto:sanatfayli@hotmail.com)

<sup>b</sup>Pierre Fabre Institute, Research & Development, Dermo-cosmetics, Toulouse, France



Table 2 (Contd.)

SC surface		SC/epidermis		Epidermis		Assignment
Transkin	Pig skin	Transkin	Pig skin	Transkin	Pig skin	
	1031		1031		1031	O-CH <sub>3</sub> $\nu$ of methoxy groups <sup>18</sup>
						$\delta$ (C-H), phenylalanine (protein assignment)
						Phenylalanine, $\nu$ (C-N) of proteins <sup>23</sup>
1047						$\nu$ PO <sub>4</sub> <sup>3-</sup> , <sup>12</sup> C-C and C-O stretching in HA
	1062	1062	1059		1062	$\nu$ (C-C) skeletal, lipids <sup>28</sup>
	1082	1082			1082	$\nu$ (C-C) or $\nu$ (C-O), phospholipids (lipid assignment), <sup>23</sup> phosphate vibrations (phosphodiester groups in nucleic acids), <sup>29</sup> nucleic acids <sup>30</sup>
			1095		1095	Lipid, <sup>31</sup> $\nu$ (C-N), <sup>12</sup> phosphodioxy group in nucleic acids <sup>20</sup>
	1128		1128	1127	1129	$\nu$ (C-N), <sup>32</sup> $\nu$ (C-C) skeletal <i>trans</i> conformation, <sup>33</sup> phospholipid <sup>34</sup>
	1155		1155		1155	$\nu$ (C-C) & (C-N) of proteins (also carotenoids), <sup>14,15</sup> glycogen <sup>30</sup>
1173	1175		1175	1173	1175	Cytosine, guanine <sup>25</sup>
	1207	1206	1205		1205	$\nu$ (C-C <sub>6</sub> H <sub>5</sub> ), tryptophan, phenylalanine (protein assignment) <sup>23,26</sup>
			1244		1244	One of the two most distinct peaks for RNA (with 813 cm <sup>-1</sup> ), <sup>19</sup> (C, T) <sup>14</sup>
	1255		1255		1256	Lipids <sup>30</sup> (doublet with the 1297 peak), amide III, adenine, cytosine <sup>14</sup>
	1271	1268	1271		1271	Amide III, <sup>14</sup> C-H (lipid) <sup>29</sup>
					1294	Cytosine <sup>25</sup>
	1297	1299	1301		1302	$\delta$ CH <sub>2</sub> lipid, <sup>13</sup> adenine, cytosine <sup>14</sup>
					1309	$\gamma_t$ CH <sub>3</sub> /CH <sub>2</sub> <sup>21</sup>
	1339	1336	1339	1338	1339	Nucleic acid mode <sup>6,35</sup>
	1389		1387		1389	CH <sub>3</sub> band, <sup>14</sup> $\delta$ CH <sub>3</sub> symmetric (lipid) <sup>26</sup>
			1393		1393	CH rocking <sup>20</sup>
	1416					$\nu$ (C=O) of COO <sup>-</sup> (amino acids aspartic & glutamic acid) <sup>21</sup>
1442	1441					Cholesterol, <sup>32</sup> fatty acids, <sup>30,37</sup> $\delta$ CH <sub>2</sub> , $\delta$ CH <sub>3</sub> <sup>38</sup>
		1449	1451	1449	1451	$\delta$ CH <sub>2</sub> , $\delta$ CH <sub>3</sub> , <sup>12,29,38</sup> C-H vibration (proteins), C-H vibration (lipids) <sup>20</sup>
1526		1526			1526	-C=C- carotenoid <sup>14</sup>
	1545		1545		1546	Tryptophan <sup>14,15</sup>
	1561				1562	Tryptophan <sup>27</sup>
	1588		1585		1586	$\delta$ C=C mode of phenylalanine, <sup>12,27</sup> $\nu$ (C=C) olefinic (protein assignment) <sup>26</sup>
	1604		1604		1604	$\delta$ C=C in-plane mode of phenylalanine & tyrosine, <sup>14,15</sup> cytosine (NH <sub>2</sub> ) <sup>25</sup>
	1613		1613		1613	Tyrosine <sup>12</sup>
1652	1653		1653		1653	$\nu$ (C=O) amide I, <sup>23</sup> amide I $\alpha$ -helix, <sup>39</sup> lipid $\nu$ (C=C), <sup>14,29</sup> carbonyl $\nu$ (C=O) <sup>24</sup> and elastin (protein assignment) <sup>23,26</sup>
						Amide I band ( $\nu$ C=O coupled to a $\delta$ N-H), <sup>17,40</sup> ceramides <sup>17</sup>
	1671		1671		1671	$\nu$ (C=O)OH (amino acids aspartic & glutamic acid) <sup>21</sup>
			1724		1724	$\nu$ CH <sup>41</sup>
	1742		1742		1742	$\nu$ CH <sub>2</sub> symmetric of lipids, $\nu$ CH <sub>3</sub> symmetric of lipids <sup>42</sup>
	2724		2727		2724	$\nu$ CH <sub>2</sub> asymmetric of lipids and proteins <sup>42</sup>
	2724		2727		2724	$\nu$ CH <sub>2</sub> asymmetric of lipids and proteins <sup>42</sup>
	2849		2850		2849	$\nu$ CH <sub>2</sub> asymmetric of lipids and proteins <sup>42</sup>
	2880		2880		2880	$\nu$ CH <sub>2</sub> asymmetric of lipids and proteins <sup>42</sup>
	2889		2889		2889	$\nu$ CH <sub>2</sub> asymmetric <sup>42</sup>
	2934		2934		2934	$\nu$ CH <sup>43</sup>

<sup>a</sup>  $\gamma_t$ : twisting (torsion),  $\delta$ : bending or deformation,  $\nu$ : stretching,  $\rho$ : rocking, A: adenine, C: cytosine, G: guanine, T: thymine.

