Supplementary Material

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| TABLE ITissue electrical properties |
| Tissue | σ LF, Sm-1 | References | σ HF, Sm-1 | References | εr, LF, | References | εr, HF, | References |
| Skin (dry) | 0.00565–0.250.0009 0.090–0.0170.07 | (Low Frequency (Conductivity) » IT’IS Foundation)(Gabriel et al., 1996)(Wake et al., 2016)(Hershkovich et al., 2019) | 38.18 | (Arab et al., 2020) | 1111 5340  | (Gabriel et al., 1996)(Hershkovich et al., 2019) | 6.565 | (Arab et al., 2020) |
| Skin (wet) | 0.059  | (Gabriel et al., 1996) | 42.97 | (Arab et al., 2020) | 1136 | (Gabriel et al., 1996) | 8.537 | (Arab et al., 2020) |
| Stratum corneum | 0.0002–0.002 | (de Santis et al., 2015) |  |  | 8000–7001000000–50000 | (Birgersson et al., 2011)(Yamamoto and Yamamoto, 1976) | 700–40050000–100 | (Birgersson et al., 2011)(Yamamoto and Yamamoto, 1976) |
| Epidermis | 0.018 ± 0.008 | (Wake et al., 2016) | ~0.35 | (Wake et al., 2016) | 100000–62500 | (Tsai et al., 2019) | 62500–50000 | (Tsai et al., 2019) |
| Dermis | 0.434 ± 0.056 | (Wake et al., 2016) | ~0.45 | (Wake et al., 2016) | 1000000–75000 | (Tsai et al., 2019) | 75000–50000 | (Tsai et al., 2019) |
|  |  |  |  |  |  |  |  |  |
| Subcutaneous fat | 0.024–0.2150.147 ± 0.020 ~0.2 | (Low Frequency (Conductivity) » IT’IS Foundation)(Wake et al., 2016)(Hershkovich et al., 2019) | ~0.15~0.22 | (Wake et al., 2016)(Hershkovich et al., 2019) | 8648–617 | (Gun et al., 2017) | 175–58 | (Gun et al., 2017) |
|  | ~0.1 | (Gabriel et al., 2009) | ~0.1 | (Gabriel et al., 2009) |  |  |  |  |
| Muscle | 0.1–0.726 | (Low Frequency (Conductivity) » IT’IS Foundation) |  |  |  |  |  |  |
| *longitudinal* | ~0.37 | (Ahad et al., 2010) | ~0.64 | (Ahad et al., 2010) | ~71167 | (Ahad et al., 2010) | ~8700 | (Ahad et al., 2010) |
|  | ~0.4  | (Nagy et al., 2019) | ~0.6  | (Nagy et al., 2019) | ~92000 | (Nagy et al., 2019) | ~9500  | (Nagy et al., 2019) |
| *transverse*  | ~0.15 | (Ahad et al., 2010) | ~0.46 | (Ahad et al., 2010) | ~53467 | (Ahad et al., 2010) | ~11867 | (Ahad et al., 2010) |
|  | ~0.21 | (Nagy et al., 2019) | ~0.42 | (Nagy et al., 2019) | ~87500 | (Nagy et al., 2019) | ~40230 | (Nagy et al., 2019) |
| Tumor | 0.22–0.400.00135 ± 0.190.166–0.2220.411–0.461 | (Miklavčič et al., 2006)(Ivorra et al., 2009)(Laufer et al., 2010)(Haemmerich et al., 2009) | 0.279–2.3460.246–0.2720.504–0.533 | (Cheng and Fu, 2018)(Laufer et al., 2010)(Haemmerich et al., 2009) | 99000–8600  | (Laufer et al., 2010) | 24.842–15.125100–3000 | (Cheng and Fu, 2018)(Laufer et al., 2010) |
| Liver | 0.0636–0.430.03–0.0910.075–0.179 | (Low Frequency (Conductivity) » IT’IS Foundation)(Laufer et al., 2010)(Haemmerich et al., 2009) | 0.124–0.1640.260–0.288~0.2 | (Laufer et al., 2010)(Gun et al., 2017)(Gabriel et al., 2009) | 82000–1100082306–18899 | (Laufer et al., 2010)(Gun et al., 2017) | 6500–34001833–262 | (Laufer et al., 2010)(Gun et al., 2017) |
|  | ~0.075 | (Gabriel et al., 2009) |  |  |  |  |  |  |
| Melanoma | 0.00000265 | (Glickman et al., 2003) | 53.445 | (Arab et al., 2020) |  |  | 9.631 | (Arab et al., 2020) |
| Prostate | 0.436–0.743 0.411–07830.238–0.901 | (Low Frequency (Conductivity) » IT’IS Foundation)(Neal et al., 2014)(Santamaría et al., 2007) | 0.916–1.060.290–1.149 | (Neal et al., 2014)(Santamaría et al., 2007) | 90200–449000 | (Santamaría et al., 2007) | 13000–1160 | (Santamaría et al., 2007) |
| Lung | 0.058–0.2490.05–0.25 | (Low Frequency (Conductivity) » IT’IS Foundation)(Wang et al., 2014) | 0.151–0.3090.16–0.57 | (Yamazaki et al., 2013)(Wang et al., 2014) | ~1000000–~10000 | (Wang et al., 2014) | 10000–100 | (Wang et al., 2014) |
| *inflated* | ~0.03 | (Gabriel et al., 2009) | ~0.06 | (Gabriel et al., 2009) |  |  |  |  |
| *deflated* | ~0.12 | (Gabriel et al., 2009) | ~0.2 | (Gabriel et al., 2009) |  |  |  |  |

LF – up to 100 kHz frequency

HF – 100 kHz and greater frequency