Acknowledgments

The support of the Spanish Ministry of Science and Innovation (Plan Nacional I+D+I, project reference AGL2008–02668) and Junta de Castilla y León (project reference LE049A05) is gratefully acknowledged.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR</td>
<td>Attenuated total reflectance</td>
</tr>
<tr>
<td>DRIFT</td>
<td>Diffuse reflectance Fourier transform infrared</td>
</tr>
<tr>
<td>DTGS</td>
<td>Deuterated triglycine sulfate</td>
</tr>
<tr>
<td>FT-IR</td>
<td>Fourier transform infrared</td>
</tr>
<tr>
<td>IR</td>
<td>Infrared</td>
</tr>
<tr>
<td>LPS</td>
<td>Lipopolysaccharide</td>
</tr>
<tr>
<td>MCT</td>
<td>Mercury cadmium telluride</td>
</tr>
<tr>
<td>MIR</td>
<td>Mid infrared</td>
</tr>
</tbody>
</table>
References


References


# Index

**A**  
Adaptive response, 23, 28  
Attenuated total reflectance (ATR), 8, 9, 29, 32, 33, 37–44

**B**  
Bacteria, 2, 8–15, 17–19, 21, 23, 26–28, 33, 35–37, 40, 43, 44  
Bacterial population, 23, 31, 36, 41

**C**  
Cell wall, 5, 10–12, 24, 25, 27–29, 35, 39  
Characterization, 2, 6, 8, 10, 16–19, 27, 36  
Chemometrics, 7, 12, 16, 18, 28

**E**  
Electromagnetic spectrum, 1, 2

**F**  
Foodborne microorganisms, 8, 9, 17, 19–21, 23, 25–27, 31, 35–37  
Food spoilage, 33, 37, 43

**I**  
Identification, 1, 2, 10, 16–21, 33, 35–39, 43  
Infrared (IR) radiation, 1–3, 6  
Injured cells, 23, 27, 28, 36, 41  
IR radiation. See Infrared (IR) radiation

**M**  
Membrane fluidity, 26, 27, 36, 40  
properties, 25–27, 40  
Microspectroscopy, 9, 15, 18, 29, 31, 33, 37–43  
Mixed cultures, 18, 31–33, 43  
Monitorization of microbial growth, 26, 31–33

**P**  
Population dynamics, 23, 31–32, 36, 41

**Q**  
Quantification, 10, 16, 17, 43

**R**  
Reflectance, 9, 17, 29, 37, 38

**S**  
Spectral windows, 1–6, 20  
Stress exposure, 35  
Stress-induced changes, 23  
Structural change, 27, 32, 41  
Sublethal injury, 15, 27, 36, 40

**T**  
Taxonomy, 19–21, 35, 37  
Transmittance, 2, 3, 8, 9, 14, 37–42, 44

**V**  
Vibrational spectroscopy, 3, 19