Contents

1 Oxidative Stress .......................... 1
Barry B. Halliwell and Henrik E. Poulsen

2 Tobacco Smoke Constituents Affecting Oxidative Stress .......... 5
Jan B. Wooten, Salem Chouchane, and Thomas E. McGrath

3 Oxidative Modifications of Proteins and Lipids by Cigarette Smoke (CS). A Central Role for Unsaturated Aldehydes in CS-Mediated Airway Inflammation ......................... 47
Albert van der Vlie

4 Cigarette Smoke-Induced Redox Signaling and Gene Expression in In Vitro and In Vivo Models .......................... 75
Thomas Müller and Stephan Gebel

5 Redox Effects of Cigarette Smoke in Lung Inflammation .......... 113
Irfan Rahma

6 Oxidative Stress in the Pathogenesis of Chronic Obstructive Pulmonary Disease .......................... 165
Irfan Rahma

7 Modulation of Cigarette Smoke Effects by Diet and Antioxidants .................. 199
Marion Dietrich and Gladys Block

8 Modulation of Cigarette Smoke Effects by Antioxidants: Oxidative Stress and Degenerative Diseases .................. 215
Jari Kaikkonen and Jukka T. Salonen

9 Smoking Depletes Vitamin C: Should Smokers Be Recommended to Take Supplements? .................. 237
Jens Lykkesfeldt

10 Experimental In Vitro Exposure Methods for Studying the Effects of Inhalable Compounds .................. 261
Michaela Aufderheide
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Oxidative Stress in Laboratory Animals Exposed to Cigarette Smoke, with Special Reference to Chronic Obstructive Pulmonary Disease</td>
<td>Chris Coggins</td>
<td>279</td>
</tr>
<tr>
<td>12</td>
<td>Pulmonary Effects of Cigarette Smoke in Humans</td>
<td>Nick H.T. ten Hacken and Dirkje S. Postma</td>
<td>293</td>
</tr>
<tr>
<td>13</td>
<td>Smoking and Oxidative Stress: Vascular Damage</td>
<td>Thomas Münzel, Felix Post, and Ascan Warnholtz</td>
<td>339</td>
</tr>
<tr>
<td>14</td>
<td>Nrf2: a Transcription Factor that Modifies Susceptibility to Cigarette Smoke-Induced Pulmonary Oxidative Stress and Emphysema</td>
<td>Shyam Biswal and Thomas W. Kensler</td>
<td>365</td>
</tr>
<tr>
<td>15</td>
<td>Tobacco Smoke and Skin Aging</td>
<td>Akimichi Morita</td>
<td>379</td>
</tr>
<tr>
<td>16</td>
<td>Cigarette Smoke and Oxidative DNA Modification</td>
<td>Henrik E. Poulsen, Allan Weimann, and Barry B. Halliwell</td>
<td>387</td>
</tr>
</tbody>
</table>