

Preface

We present here a full and detailed set of reviews focusing on the toxicology and bioactivity of bile acids. We have brought together world experts in their own fields to discuss the contribution of bile acids to various disease pathologies, as well as discussing the mechanisms behind their activity.

This exciting manuscript, for the first time, details the plethora of biological activities of this fascinating group of naturally occurring chemicals. We hope that this provides a one-stop reference for scientists to gain a fuller understanding of bile-acid activity and function.

Bile acids are essential agents involved in lipid digestion and absorption in mammals. However, they play wide-ranging roles in a variety of disease states ranging from diabetes to cancer. They have evolved exquisite mechanisms for controlling their own synthesis and to ensure that they are produced at correct concentrations and also kept in the correct anatomical environment. It is only when these fine levels of controls are breached that bile acids become associated with disease. This breaching of control mechanisms can occur through dietary means (*e.g.* in obesity) whereby excessive levels of bile acids are produced and converted (via the bacterial flora) to damaging secondary bile acids. Furthermore, lack of reabsorption of Bile acids can lead to liver pathologies. The atypical movement of Bile acids into the oesophagus, stimulated by episodes of reflux, is linked to oesophageal cancer.

We would like to thank everyone who has contributed to this book and hope that the readers of this manuscript find the text stimulating and rewarding in terms of their understanding of the mechanisms underlying bile-acid induced pathology.

Gareth Jenkins and Laura J. Hardie

“By the gods, you can swallow your own bile till it kills you”

William Shakespeare
Brutus to Cassius in *Julius Caesar*

In Shakespeare’s time, the traditional model of illness was as an imbalance of the four humours: melancholy (or black bile), choler (or yellow bile), blood, and phlegm.