CHAPTER 1

# *Anti-Aging Drugs: Where are We and Where are We Going?*

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## 1.1 Introduction

Human longevity dramatically increased during the last century when implementation of vaccinations, disinfectants and antibiotics led to a substantial reduction of infectious diseases as a leading cause of death.[1] The decline in mortality among the elderly has continued over the past few decades. It is most probably owing to preventative factors, such as improved diets, as well as exercise and reduction in smoking.[2] If current demographic trends continue then 20% percent of the global population of 9 billion will be over the age of 60 by 2050.[3] As a consequence, most modern nations are undergoing rapid population aging. Although the life expectancy has enhanced dramatically in modern generations, this process has, nevertheless, not been accompanied by an equivalent increase in healthy life expectancy.[4] Since aging is a primary risk factor in most chronic disorders, the prevalence of age-associated disorders, such as type 2 diabetes, neurodegenerative disease, cardiovascular disease, osteoporosis and cancer, rises considerably with the increasing average age in populations of developed countries, representing a

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