
Abstract

The adaptogen concept is examined from an historical, biological, chemical, pharmacological and medical perspective using a wide variety of primary and secondary literature. The definition of an adaptogen first proposed by Soviet scientists in the late 1950s, namely that an adaptogen is any substance that exerts effects on both sick and healthy individuals by ‘correcting’ any dysfunction(s) without producing unwanted side effects, was used as a point of departure. We attempted to identify critically what an adaptogen supposedly does and to determine whether the word embodies in and of itself any concept(s) acceptable to western conventional (allopathic) medicine. Special attention was paid to the reported pharmacological effects of the ‘adaptogen-containing plant’ *Eleutherococcus senticosus* (Rupr. & Maxim.) Maxim. (Araliaceae), referred to by some as ‘Siberian ginseng’, and to its secondary chemical composition. We conclude that so far as specific pharmacological activities are concerned there are a number of valid arguments for equating the action of so-called adaptogens with those of medicinal agents that have activities as anti-oxidants, and/or anti-cancerogenic, immunomodulatory and hypocholesteroletic as well as hypoglycemic and choleretic action. However, ‘adaptogens’ and ‘anti-oxidants’ etc. also show significant dissimilarities and these are discussed. Significantly, the classical definition of an adaptogen has much in common with views currently being invoked to describe and explain the ‘placebo effect’. Nevertheless, the chemistry of the secondary compounds of *Eleutherococcus* isolated thus far and their pharmacological effects support our hypothesis that the reported beneficial effects of adaptogens derive from their capacity to exert protective and/or inhibitory action against free radicals. An inventory of the secondary substances contained in *Eleutherococcus* discloses a potential for a wide range of activities reported from work on cultured cell lines, small laboratory animals and human subjects. Much of the cited work (although not all) has been published in peer-reviewed journals. Six compounds show various levels of activity as anti-oxidants, four show anti-cancer action, three show hypocholesterolemic activity, two show immunostimulatory effects, one has choleretic activity and one has the ability to decrease/moderate insulin levels, one has activity as a radioprotectant, one shows anti-inflammatory and anti-pyretic activities and yet another has shown activity as an antibacterial agent. Some of the compounds show more than one pharmacological effect and some show similar effects although they belong to different chemical classes. Clearly, *Eleutherococcus* contains pharmacologically active compounds but one wishes that the term adaptogen could be dropped from the literature because it is vague and conveys no insights into the mechanism(s) of action. If a precise action can be attributed to it, then the exact term for said action should obviously be used; if not, we strongly urge that generalities be avoided. Also, comparison of *Eleutherococcus* with the more familiar *Panax ginseng* C.A. Meyer (Araliaceae), ‘true ginseng’ has underscored that they differ considerably chemically and pharmacologically and cannot be justifiably considered as mutually interchangeable. Accordingly, we recommend that the designation ‘Siberian ginseng’ be dropped and be replaced with *Eleutherococcus*. In the case of both *Eleutherococcus* and true ginseng, problems inherent in herbal preparation use include inconsistencies not only in terms of indications for use, but in the nomenclature of constituent chemical compounds, standardization, dosage and product labeling. Finally, our re-examination and fresh interpretation of the literature on *Eleutherococcus* and comparison with true ginseng shows that the potential for a scientifically more complete and defensible exploitation of these plants will be better served by investigating and considering them in a context that consciously ignores the fact that the word ‘adaptogen’ was ever invented.