Preface

Caffeine is a central nervous system (CNS) stimulant of the methylxanthine class. It is used as a cognitive enhancer, increasing alertness and attentional performance. Caffeine acts by blocking binding of adenosine to the adenosine A1 receptor, which enhances release of the neurotransmitter acetylcholine.[14] Caffeine has a three-dimensional structure similar to that of adenosine, which allows it to bind and block its receptors. Caffeine also increases cyclic AMP levels through nonselective inhibition of phosphodiesterase.

Caffeine is a bitter, white crystalline purine, a methylxanthine alkaloid, and is chemically related to the adenine and guanine bases of deoxyribonucleic acid (DNA) and ribonucleic acid (RNA). It is found in the seeds, fruits, nuts, or leaves of a number of plants native to Africa, East Asia and South America, and helps to protect them against herbivores and from competition by preventing the germination of nearby seeds, as well as encouraging consumption by select animals such as honey bees. The best-known source of caffeine is the coffee bean, the seed of the Coffea plant. People may drink beverages containing caffeine to relieve or prevent drowsiness and to improve cognitive performance. To make these drinks, caffeine is extracted by steeping the plant product in water, a process called infusion. Caffeine-containing drinks, such as coffee, tea, and cola, are consumed globally in high volumes. [i]

In the present book, twenty-three typical literatures about caffeine published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on caffeine. We hope this book can demonstrate advances in caffeine as well as give references to the researchers, students and other related people.

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[i] https://en.wikipedia.org/wiki/Caffeine