

## CHEMICAL PROPERTIES OF CAFFEINE AND ITS USE IN COSMETIC INDUSTRY

M.Y. Egorenko, I.K. Zabrodina

Scientific adviser - associate professor Zabrodina I.K.

*National research Tomsk polytechnic university, Tomsk, Russia*

We all know that caffeine has abducted our minds. It is the widely spreading psychoactive drug. This is found approximately in the 60 known species of plants native to Africa, East Asia and South America like coffee beans. Coffee was consumed in Arabia in the 13th century and was adopted to Europe in the early 17th century. It lixiviates (synthesis) from tea's second running, coffee seeds. This can be synthesized from in industry uric acid, xanthine.

As we know drinks, cosmetics and medicines are the most useful legal substances for using caffeine nowadays. Caffeine is a central nervous system (CNS) stimulant of the methylxanthine class. It 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) [3]. Today caffeine can be named: Guanine; Methyltheobromine; 1,3,7-Trimethylxanthine; Theine [6]. These are neologisms [1, 2].

Purpose of the study is chemicals characteristics of caffeine

Research objective is to know characteristics of caffeine, analyse research tracking processes in human body and its use in cosmetic industry

Object of study is caffeine.

Methyltheobromine may affect physiologically and psychologically on a human organism. The physiological effect is a stimulation of the CNS, the cardiovascular system (CVS) and organs of digestion. Its effects last from 1 hour till 3–4 hours. Caffeine is rapidly absorbed from the gastrointestinal organs and then is metabolised by demethylation and oxidation in the liver. Further, processes begin such as lipolysis, toning vessels, fastening cell membranes and fusion lipids. Lipolysis breaks down fat cells and promote weight loss. Toning vessels improves tonification of blood vessels which leads to increase in microcirculation. Fastening cell membranes retains moisture in the upper layers of the skin, but can also remove excess fluid, which helps to reduce swelling. Fusion lipids enhances the synthesis of lipids and cholesterolins that protect skin. Also, Guanine blocks adenosine A1 and A2 receptors. These are present in all brain parts, particularly in the hippocampus, cerebral cortex, cerebellar cortex and thalamus. The psychological effect of this group of chemicals increases alertness, reduces fatigue and can elevate mood. Normal consumption improves execution on tasks that require alertness, such as simulated driving tasks [5].

We must admit that human skin react as if we drink it. This is meant that processes will be the same independently no matter if caffeine came from organs of digestion or creamed on our skin. The factor means we can recover guanine in cosmetic or pharmacy industry. We assume that you as costumer all see a lot of cosmetics products containing caffeine. These extracts are in high use in many kinds of cosmetics. As we mentioned before guanine speeds up metabolism, contributes to the removal of deposits of toxins from the organism, reduces puffy eyes, improves the microcirculation, enhances anti-cellulite properties, begins lipolysis and releases the excess of fat. It is generally agreed today that caffeine has a great number of using in cosmetic or pharmacological industry and chemical properties explain why it best-selling these days [4]. In near future we want to research effects of caffeine more closely. Our aim will be exploration smell of caffeine in cosmetic product, how to regulate concentration of it to escalate a circle of customers: to reduce smell for people who displease it and to increase for people who appeal it.

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