**I A Paragraph:**

Parabens and their different derivatives are the most commonly used preservatives, as mentioned. Most of the time, they can be found naturally in flora and fauna, having the same purpose, to prevent disinfections. While this defense mechanism works nearly perfect, humankind observed and imitated this natural mechanism by making their mass produced products, especially nutrition, pharmaceuticals and cosmetic products, have a long shelf life. Interestingly, this theory works just as fine as in the nature itself but like in every aspects, it has its own downsides that will be mentioned later on this paper. Para-hydroxybenzoic acid and its esters can be found both in nature and synthesized artificially. Especially certain kinds of plants and insects use these molecules as a weapon against bacterial infections, the same goal as humankind seek. To begin with, plants’ specific parts can be extracted in order to obtain such molecules**. Irvine, in 1994, stated that such plants include different condensed esters of parabens naturally, in addition with fermentable fruit extracts, while making alcoholic beverages and milk based products (“Parabens- the natural preservatives” section).** It is clear that parabens can easily be found in naturally vegetables and also can easily be extracted for usage. In addition, para-hydroxy benzoates can also be found in some specific insects**. Irvine points out that in different faunas, paraben derivatives are synthesized for some other aspects. For instance (as cited in Schildknecht), to prevent from microbiological plagues, some kind of insects, the yellow beetle (Dytiscus Marginalis) produce parabens, especially the methylated derivate mixed with para-hydroxybenzoic acid and aldehyde analog from their odour tissues. In addition, same derivative is found in genital section of female dogs and the purpose of this presence is same as the insects. Lastly, from metabolisation of some proteins and certain kind of L-structured amino acid, tyrosine, parabens are found in urine of normal people (1994 ,“Parabens- the natural preservatives” section).** All things considered, parabens can form naturally in animal world for different reasons, such as for defense or a side product in their metabolism. Lastly, parabens can be produced by some chemical industrial processes. **As stated in Wikipedia Encyclopedia, since parabens are esters of para-hydroxybenzoic acids, they can be produced through simple chemical reactions. Through the improved Kolbe process, phenol can be acidified from its para position and these added acid functionality can be esterified through some commercially used alcohol and their derivatives (2015,”Synthesis” section).** In the light of this information, commercially used different kinds of parabens can be produced through simple industrial processes. When all this information is considered, it is certain that parabens and their derivatives not only can be found naturally in numerous habitats, they can also be a part of a perfectly functioning human, as a result of the human body’s metabolism. Hence, in certain levels, parabens are nearly in all of habitats’ bodies as a result of defense mechanism.

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