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EXAME DE LINGUA INGLESIA PARA INGRESSO NO MESTRADO EM CIÊNCIAS FARMACÊUTICAS

INSTRUÇÕES

- Leia com bastante atenção cada questão antes de responder;
- Verifique se seu caderno de provas contém 10 questões objetivas;
- É permitida a consulta de um dicionário impresso durante a prova;
- Não é permitido o uso de qualquer material didático e/ou eletrônico;
- A duração da prova será de até 03 (três) horas, sem tempo adicional para preenchimento de gabarito.
- **Não é permitido rasura no gabarito, bem como marcação de mais de uma alternativa por questão.**
- **Não será fornecido gabarito adicional ao candidato.**

Boa prova!

The Value of Plants Used in Traditional Medicine for Drug Discovery

FABRICANT, D.S., FARNSWORTH, N.R.. *Environmental Health Perspectives*, vol. 109, 2001.

Plants have an advantage in this area based on their long-term use by humans (often hundreds or thousands of years). One might expect any bioactive compounds obtained from such plants to have low human toxicity. Obviously, some of these plants may be toxic within a given endemic culture that has no reporting system to document these effects. It is unlikely, however, that acute toxic effects following the use of a plant in these cultures would not be noticed, and the plant would then be used cautiously or not at all. Chronic toxic effects would be less likely to signal that the plant should not be used. In addition, chemical diversity of secondary plant metabolites that results from plant evolution may be equal or superior to that found in synthetic combinatorial chemical libraries.

It was estimated that in 1991 in the United States, for every 10,000 pure compounds (most likely those based on synthesis) that are biologically evaluated (primarily in vitro), 20 would be tested in animal models, and 10 of these would be clinically evaluated, and only one would reach U.S. Food and Drug Administration approval for marketing. The time required for this process was estimated as 10 years at a cost of \$231 million (U.S.).

1. Based on the text above, select the correct statement.

- a) **Plant evolution causes a structural diversity of secondary metabolites.**
- b) Synthetic chemical products should be avoided because of their many toxic effects.
- c) The authors propose a new reporting system to document toxic effects of medicinal plants.
- d) Synthetic combinatorial chemical libraries are reports of toxic effects of medicinal plants.
- e) Plants are used by humans for only a few years.

2. 'Most likely' in paragraph 2 is closest in meaning to:

- a) **Probable**
- b) Front runner
- c) Must
- d) More likely
- e) Must likely

3. Look at the underlined words and mark the sentence which represents appropriate translation according to the sequence 1,2,3 and 4.

“Chronic toxic effects would be less likely¹ to signal that the plant should not be² used. In addition³, chemical diversity of secondary plant metabolites that results from plant evolution may be⁴ equal or superior to that found in synthetic combinatorial chemical libraries”.

- a) menos parecidos¹, não deve ser², em adição³, talvez⁴
- b) menos gostosos¹, deve ser², além disso³, pode ser⁴
- c) Iguais¹, não deve ser², dentro de³, provavelmente⁴
- d) **menos prováveis¹, não deve ser², além disso³, pode ser⁴**
- e) melhores¹, deve ser², com adição³, talvez⁴

Pesticide Additive Could Be One Culprit in Bee Deaths

*By Christopher Intagliata on January 21, 2017.
Scientific American*

Springtime is flower season. And that includes some *90 million almond trees* in California. It's the largest pollination event in the U.S.—and beekeepers truck in two thirds of the nation's captive honeybees to do the job. But for the last decade or so, the keepers have complained about failing colonies, with underdeveloped bees ejected from their hives.

Now a study identifies one possible culprits. Not a pesticide, but one of the many ingredients used alongside them. "So these are added into a formulation to enhance the efficacy of the active ingredients." Julia Fine, an entomologist at Penn State. "It's just called "other ingredients" and they often are the bulk of the formulated product."

The chemical in question is known as an organosilicone surfactant. Fine and her colleagues fed the chemical to honeybee larvae over time, and exposed them to a cocktail of common beehive viruses. And they found that larvae exposed to the chemical and the viruses together appeared to die in greater numbers than did bees exposed to the viruses or the chemical alone—a possible synergistic effect. And the symptoms they saw mirrored the ones beekeepers observed in their hives. The study is in the journal *Scientific Reports*. [Julia D. Fine et al, An Inert Pesticide Adjuvant Synergizes Viral Pathogenicity and Mortality in Honey Bee Larvae]

Fine and her team still have to determine how much of these chemicals actually make it into the bees' food. But they do know hundreds of thousands of pounds of them are used in almond orchards each year. And elsewhere. "Agriculture is just one use for organosilicone surfactants. It's all over the place. So if we can find it has any effect in an organism, it will be relevant."

4. What is the focus of the text written by the author Christopher Intagliata?
 - a) Disclose the study the researcher Julia D. Fine.
 - b) Contextualize a world without bees.
 - c) Showed the importance of the use of organosilicone surfactant in pesticides.
 - d) **Warn about the death of bees caused by a set of facts including viruses and agricultural additives.**
 - e) Toxicological risks of agrochemical adjuvants as organosilicone.

5. Mark the correct sentence, according to the text.
- a) **The study of Julia Fine report the death of bees by the synergistic effect of pesticide additives.**
 - b) This problem does not only occur in the USA.
 - c) Bees are transmitters of viruses.
 - d) Organosilicone are used to treat diseased bees.
 - e) Currently all chemicals have been related to the death of bees
6. What is the correct translation of the phrase “*Agriculture is just one use for organosilicone surfactants. It's all over the place. So if we can find it has any effect in an organism, it will be relevant.*”
- a) Na agricultura é usado apenas surfactantes organosilicone. Está por todo o lugar. Assim, se pudermos achar que tem algum efeito em um organismo, será relevante.
 - b) A agricultura é apenas um uso para organosilicone surfactantes. Está em qualquer lugar. No entanto, achar que tem algum efeito em outro organismo, será relevante.
 - c) A agricultura apenas usa surfactantes organosilicone. Existe por todo o lugar. Logo, se pudermos achar que tem algum efeito em um organismo, será relevante.
 - d) A agricultura é apenas um uso para surfactantes organosilicone. Ela por todo o lugar. Assim, se pudermos achar que tem algum efeito em um organismo, será relevante.
 - e) **A agricultura é apenas um entre vários usos do surfactantes organosilicone. Ele está por todo o lugar. Assim, se pudermos achar que tem algum efeito em um organismo, será relevante.**



Safety fears over nanocosmetics

Story from BBC NEWS:

<http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7706818.stm>

Cosmetics containing tiny "nano" particles are being used widely despite unresolved issues surrounding their safety, a consumer watchdog warns.

Many skin care products, including sunscreens and wrinkle creams, contain this technology to make them easier to apply and invisible on the skin. But experts are concerned about their possible long-term effects on the body, Which? reports.

Which? wants more safety checks and tighter regulation of their use. It says, at the moment, consumers cannot tell which products use nanomaterials as many fail to mention it.

Nanocosmetics

Nanotechnology is the science of manipulating atoms and molecules on the nanoscale - 80,000 times smaller than the width of a human hair. The cosmetics industry is using it to create new materials with novel properties.

On the flip-side, that might mean unexpected risks.

Which? wrote to 67 cosmetics companies, including all of the main brands as well as smaller ones, asking them about their use of nanotechnology, what benefits they thought it brought and how they ensured product safety.

Seventeen firms responded, and of these, eight were willing to provide information about how they used nanotechnology. Most of the eight, which included The Body Shop, Boots, Nivea, Avon, L'Oréal, Unilever, Korres and The Green People, used nanotechnology for the UV filters in their sunscreens. Which? also found evidence of other cosmetics companies offering nanocosmetics online.

Skin penetration

These products included nano emulsions - preparations containing oil and water droplets reduced to nano size - used to preserve active ingredients, such as vitamins and anti-oxidants, and for their lightness and transparency. Another example was a type of nanomaterial called "fullerenes" used in anti-aging cream products. Scientists have raised particular concerns about potential toxicity of fullerenes if they were able to penetrate the skin. There is also a concern that the nanomaterials in sunscreens might be able to breach sunburned skin.

The Which? report says all nanocosmetic products should have an independent safety assessment. The precautionary principle should be applied to products where there are potential risks but where it is not currently possible to assess their safety so that consumers are not put at risk, it says.

Sue Davies of Which? said: "We're not saying the use of nanotechnology in cosmetics is a bad thing, far from it. Many of its applications could lead to exciting and revolutionary developments in a wide range of products, but until all the necessary safety tests are carried out, the simple fact is we just don't know enough.

"The government must introduce a compulsory reporting scheme for manufactured nanomaterials so we are all aware - and only those that are independently assessed as safe should be allowed to be used in cosmetics."

7. Regarding to the text below:

"Cosmetics containing tiny "nano" particles are being used widely despite unresolved issues surrounding their safety, a consumer watchdog warns". Which alternative shows the correct words that best replace the words **tiny** and **watchdog**, respectively, on the text without modifying the sense?

- a) low/guard dog
- b) low/guardian
- c) low/dog keeper
- d) very small/guard dog
- e) **very small/guardian**

8. Check the alternative that shows the correct translation of the text below:

"The government must introduce a compulsory reporting scheme for manufactured nanomaterials so we are all aware - and only those that are independently assessed as safe should be allowed to be used in cosmetics."

- a) O governo pode introduzir um esquema de notificação obrigatória para os nanomateriais comercializados, de modo que nós estejamos alertas - e apenas aqueles que são avaliados como seguros devem ser proibidos de serem usados em cosméticos.
- b) O governo pode introduzir um esquema de notificação obrigatória para os nanomateriais fabricados, de modo que eles estejam cientes - e apenas aqueles que são avaliados como seguros devem ser autorizados a serem usados em cosméticos.
- c) O governo deve introduzir um sistema de notificação obrigatória para os nanomateriais fabricados, de modo que nós estejamos cientes - e apenas aqueles que são avaliados como seguros devem ser autorizados a serem usados em cosméticos.**
- d) O governo deve introduzir um sistema de notificação compulsória para os nanomateriais fabricados, de modo que nós estejamos cientes - e apenas os que o governo acessar como seguros serão usados em cosméticos.
- e) O governo pode introduzir um sistema de notificação compulsória para os nanomateriais comercializados, então nós estaremos acordados - e apenas o governo acessará como seguros serão usados em cosméticos.

9. According to the text, “width” could be translated as:

- a) **espessura**
- b) aspecto
- c) tamanho
- d) textura
- e) magnitude

10. From the following sentence “There is also a concern that the nanomaterials in sunscreens might be able to breach sunburned skin”, it is possible to conclude that:

- a) All the types of sun cream, such as lotions, spray and/or lipsticks are feasible to contain nanomaterials.
- b) The risk associated to sunscreens is related to exposure to the sun and skin phototype.
- c) The wounded skin should not be exposed to the sun, as it is harmful and may cause undesired pigmentation.
- d) The bronzed skin is more fragile, as such there is the burden that the nanomaterials present in the sunscreen could damage it.**
- e) Sunscreen are risk if not applied in the skin at least 30 min before sun exposure and reapplied every 2 hours