ANSES Opinion
Request No 2019-SA-0212

The Director General

Maisons-Alfort, 19 June 2020

OPINION
of the French Agency for Food, Environmental and Occupational Health & Safety

on two cases of severe acute life-threatening hepatitis associated with consumption of the food supplement Chewable Hair Vitamins®

ANSES undertakes independent and pluralistic scientific expert assessments.
ANSES primarily ensures environmental, occupational and food safety as well as assessing the potential health risks they may entail.
It also contributes to the protection of the health and welfare of animals, the protection of plant health and the evaluation of the nutritional characteristics of food.

It provides the competent authorities with all necessary information concerning these risks as well as the requisite expertise and scientific and technical support for drafting legislative and statutory provisions and implementing risk management strategies (Article L.1313-1 of the French Public Health Code).

Its opinions are published on its website. This opinion is a translation of the original French version. In the event of any discrepancy or ambiguity the French language text dated 19 June 2020 shall prevail.

1. BACKGROUND AND PURPOSE OF THE REQUEST

Under the nutrivigilance scheme it set up in 2009, ANSES received two reports of severe adverse effects (Level 3 severity with life-threatening prognosis)[1] likely to be associated with consumption of the food supplement Chewable Hair Vitamins® marketed by HairBurst, a company based in the United Kingdom. Causality of the product in these two cases, registered in the nutrivigilance database under the numbers 2019-475 and 2019-480 respectively, was found to be very likely.

Given the severity of the adverse effects described (severe acute hepatitis requiring a liver transplant in one of the two cases), ANSES felt it necessary to bring this case to the attention of the public and health professionals, with a view to improving protection of consumer health.

2. ORGANISATION OF THE EXPERT APPRAISAL

The expert appraisal was carried out in accordance with French standard NF X 50-110 "Quality in Expert Appraisals – General Requirements of Competence for Expert Appraisals (May 2003)".

This expert appraisal falls within the scope of the Expert Committee (CES) on "Human Nutrition". The draft opinion, validated by the Working Group on "Nutrivigilance" on 21 April 2020, was sent to the CES on 23 April 2020. The conclusions were adopted by the CES at its meeting of 29 April 2020.

ANSES analyses interests declared by experts before they are appointed and throughout their work in order to prevent risks of conflicts of interest in relation to the points addressed in expert appraisals.

The experts' declarations of interests are made public via the ANSES website (www.anses.fr).

[1] The scale of severity in nutrivigilance goes from Level 1 (low severity) to Level 4 (death).

3. ANALYSIS AND CONCLUSIONS OF THE WG AND THE CES

As part of its nutrivigilance scheme, ANSES received two reports of severe acute hepatitis likely to be associated with consumption of the food supplement Chewable Hair Vitamins® marketed by the British company HairBurst. These cases were registered under the numbers 2019-475 and 2019-480.

3.1. Product composition

The composition of the product varied according to which source was considered: the labelling declared to the DGCCRF (forwarded to ANSES by the DGCCRF) or the label of the product consumed by the patient in Case 2019-475. Table 1 shows the two compositions with the differences indicated in bold and the forms given in brackets.

Table 1: Comparative compositions between the declared label and the label of the analysed product

Composition declared to the DGCCRF	Composition on the label of the product consumed by the patient in Case 2019-475
10 mg zinc (zinc gluconate)	10 mg zinc (in gluconate form)
80 mg vitamin C (calcium L-ascorbate and ascorbic acid)	80 mg vitamin C (unspecified form)
12 mg vitamin E (DL-alpha-tocopheryl acetate)	12 mg vitamin E (unspecified form)
6 mg vitamin B5 **(D-calcium pantothenate)**	6 mg vitamin B5 **(in pantothenic acid form)**
800 µg vitamin A (retinyl acetate)	800 µg vitamin A (unspecified form)
2.5 µg vitamin B12 (cyanocobalamin)	2.5 µg vitamin B12 (unspecified form)
1.4 mg vitamin B6 (pyridoxine hydrochloride)	1.4 mg vitamin B6 (unspecified form)
150 µg vitamin B8 **(D-Biotin)**	150 µg vitamin B8 **(biotin)**
50 µg selenium **(sodium selenate)**	**55 µg** selenium **(as sodium selenite)**
glucose syrup	glucose syrup
sugar	sugar
bovine gelatine	gelatine of bovine origin
natural blackcurrant flavouring	blackcurrant and strawberry flavourings
natural strawberry flavouring	
other natural flavourings	-
acid (malic acid)	malic acid
food colouring **(concentrated paprika, carrot and blackcurrant)**	colouring **(carmine)**
vegetable oil (coconut, **rapeseed**)	coconut, **palm and sunflower** vegetable oils
sweetener (steviol glycosides)	-
coating agent (**carnauba wax**)	coating agent (**unspecified**)
	carnauba wax
-	**vitamin D**
-	**sorbitol**
-	**dextrose**

3.2. Analysis of the product

The Chewable Hair Vitamins® product consumed by the patient in Case 2019-475 was analysed by the Joint Laboratories Service (SCL) following a request from the French Customs' Observatory of Medicinal Products. The purpose of this analysis was to look for potential adulteration of the product by a medicinal substance: no such substance was found. The product consumed by the second patient could not be recovered and was therefore not analysed.

The SCL also conducted an additional analysis to quantify the vitamins A and E found in the product. **For two pastilles, it found a vitamin E content of 31.6 mg (compared with 12 mg stated on the**

label), i.e. 47.4 IU, and a vitamin A content of 1017 µg (compared with 800 µg on the label), i.e. 3356 IU.

3.3. Case descriptions

3.3.1.Case 2019-475

This case concerned a 29-year-old woman (BMI of 21.6 kg/m²) with no prior medical history other than a latex allergy. There was no alcohol or tobacco poisoning, she was not taking any medication apart from recent use of an oral contraceptive (Optimizette®), and had not recently travelled.

In August 2019, she began taking the food supplement Chewable Hair Vitamins® (one chewing gum pastille per day).

On 30 September, the patient complained of debilitating asthenia and dyspeptic disorders associated with cholestatic jaundice with dark urine and discoloured stools. She received symptomatic treatment with trimebutine and stopped taking the food supplement.

On 2 October, she ate pasta with mushrooms in an Italian restaurant.

On the evening of 3 October, nausea, vomiting and sweating occurred, and the persistence of these symptoms led to her being hospitalised on 7 October.
The patient was afebrile on admission and the clinical examination was normal, except for mucocutaneous jaundice. Biological examinations revealed major abnormalities in liver biology: AST[2] 957 IU/L (normal: 15-37 IU/L), ALT 2234 IU/L (normal: 14-59 IU/L), ALP 215 IU/L (normal: 50-136 IU/L), GGT 221 IU/L (normal: 5-55 IU/L), total bilirubin 197 µmol/L (normal: < 17 µmol/L) and conjugated bilirubin 170 µmol/L. There were no biological signs of hepatocellular failure: prothrombin ratio (PR) 69% (normal: 70-120%) and factor V 84% (normal: 70-120%). There were no fluid or electrolyte imbalances and the blood count was normal.
In view of these biological findings, the patient was transferred to the internal medicine unit of another hospital. Progression was characterised by an increase in cytolysis (ALT 2553 IU/L) and cholestasis without biological signs of hepatocellular failure.

On 19 October, a fever of 38°C occurred, associated with a maculopapular, morbilliform skin rash on the palms of the hands and soles of the feet. This then spread without affecting the mucous membranes. Blood culture results and the search for an infectious origin were negative.

On 22 October, the PR was 59% with no decrease in factor V, leading to vitamin K supplementation. The patient was then transferred to a hepatology unit and began treatment with acyclovir and N-acetyl-cysteine (NAC), which was replaced on 31 October by corticosteroid therapy on the assumption of autoimmune hepatitis.

On 5 November, treatment was discontinued due to the occurrence of febrile neutropaenia with *Staphylococcus aureus* bacteraemia that rapidly improved with antibiotic therapy.

On 13 November, corticosteroid therapy was resumed with improved liver biology, which continued beyond the cessation of treatment on 23 November.

[2] ALTs (alanine aminotransferases), ASTs (aspartate aminotransferases), ALPs (alkaline phosphatases) and GGTs (gamma-glutamyl transpeptidases) are markers of liver function.

The subsequent course was favourable with no recurrence of fever, a regression of the cutaneous signs and liver biology abnormalities, and partial correction of the hypoalbuminaemia (the hospitalisation report indicated that the blood albumin, which measured as low as 17 g/L on admission, had improved to 32 g/L on discharge). The patient was discharged from hospital on 25 November and was informed of the importance of not taking the food supplement again on account of its potential toxicity, and of not self-medicating.

This favourable development was confirmed on 18 December at a medical consultation during which the patient was reminded of the contraindication of all medicines, food supplements and alcohol until liver function had completely returned to normal.

The aetiological investigation conducted during the two hospital admissions gave the following results:

- morphological explorations (abdominal-pelvic computed tomography and abdominal ultrasound) found no abnormalities of the liver parenchyma, bile ducts, pancreas or vascular blood flow;
- virus tests by serology and/or PCR were negative: hepatitis A, B, C and E, HSV, CMV, EBV, measles, rubella, HIV, adenovirus and parvovirus B19. Anti-HHV6 IgG antibodies were positive with no change in the level over time;
- signs of autoimmune disease were absent (anti-nuclear, anti-native DNA, anti-mitochondria, anti-LKM and anti-smooth muscle antibodies were negative) and there was no hypergammaglobulinaemia;
- ceruloplasmin was normal;
- the liver biopsy showed a parenchyma with normal architecture but necrotic inflammatory periportal and lobular lesions, indicating severe acute hepatitis whose morphological characteristics primarily suggested an autoimmune origin. There was no evidence in favour of Wilson's disease or any other pre-existing liver condition;
- skin biopsies showed layered keratinocyte necrosis, with inflammatory exocytosis and discrete superficial dermatitis, without leukocytoclastic vasculitis. The aspect of the skin biopsy suggested drug-induced erythematous toxidermia.

3.3.2.Case 2019-480

This case concerned a 36-year-old woman (BMI of 23.4 kg/m²) with no prior personal history, taking the oral contraceptive Clareal®. There was a family history of genetic haemochromatosis.

On 10 April 2019, she gave birth to her second child through the vaginal route. There were no complications during pregnancy or delivery.

When she left the maternity ward, she started taking the food supplement Chewable Hair Vitamins®.

On around 15 May 2019, after taking the supplement for about a month, a mucocutaneous jaundice with asthenia gradually appeared. She had no abdominal pain, diarrhoea or arthralgia. She had not travelled in the recent past and there was no infectious contagion.

On 25 May, her biological test results showed haemoglobin of 14.6 g/dL and a platelet count of 206,000/mm^3. A predominant hepatic cytolysis based on ALT levels (ALT 3221 IU/L, normal: < 34 IU/L and AST 1754 IU/L, normal: < 31 IU/L) and icteric cholestasis (GGT 395 IU/L, normal: 10-38 IU/L, ALP 403 IU/L, normal: 40-100 IU/L and total bilirubin 244 µmol/L, normal: < 17 µmol/L) were found.

On 29 May, an abdominal ultrasound was performed in a community health centre. It showed discrete hepatomegaly (17 cm) without hepatic dysmorphia. The bile ducts were narrow, without any

obstruction noted. The suprahepatic veins and portal vein were permeable. There was no ascites or collateral network. The biological test results of 29 May showed a decrease in the cytolysis (ALT 2182 IU/L, AST 1320 IU/L) with GGT 336 IU/L and ALP 419 IU/L, and an increase in the jaundice (total bilirubin 460 µmol/L). The PR was 36%, indicating hepatocellular failure (normal: 70-120%).

On 1 June, she was admitted to hospital and stopped taking the food supplement. The clinical examinations found no abnormalities other than the jaundice and hepatomegaly. Total bilirubin was 520 µmol/L, PR was 18% with a V-factor down to 46% (normal: 70-120%).

On 2 June, the thoracic-abdominal scan showed an aspect consistent with acute hepatitis, without focal lesions.

On 3 June, a new abdominal scan showed an increase in periportal hypodensities with a heterogeneous parenchymal enhancement. There was no intrahepatic hematoma and no sign of active bleeding. The gallbladder was distended and was the site of a discretely hyperdense oval formation, not visible on the previous day's scan (blood clot). A very discrete dilatation of the bile ducts appeared.

HIV, HAV, HCV, HEV, HBV, EBV, CMV and HSV serologies were negative. The haemochromatosis gene mutation test was negative. Copper balance was normal. Drug screening tests (salicylates, barbiturates, benzodiazepines, antidepressants) were negative.

A transjugular liver biopsy was performed on 3 June. There was significant sinusoidal portal hypertension, which is difficult to interpret in the context of acute hepatitis. Heart and lung pressure were normal. Cardiac index was increased. Histologically, the architecture of the parenchyma was consistent, but there were extensive inflammatory lesions of parenchymal necrosis indicating submassive acute hepatitis. An autoimmune origin was suggested.
The remainder of the biological test results noted the absence of hypergammaglobulinaemia and anti-nuclear or anti-tissue antibodies.

On 4 June, corticosteroid therapy with Cortancyl was begun.

On 10 June, the patient was haemodynamically stable and afebrile. There was no hepatic encephalopathy. The biological tests did not show a clear improvement under corticosteroids. The PR was 23% with blood bilirubin 508 µmol/L. There was a slight increase in cholestasis. The patient had diffuse swelling, especially on the face, with a 2 kg weight gain in five days.

On 19 June, faced with the appearance of hepatic encephalopathy with asterixis and psychomotor retardation, the patient was given an emergency transplant. She had no intra- or post-operative complications other than moderate pancytopaenia, which improved rapidly with the reduction in dosage of Cellcept, introduced as an immunosuppressant after the liver transplant. A good resumption of graft function was observed.

Analysis of the explanted liver showed a normal parenchyma and extensive panlobular and multilobular parenchymal necrosis, of varying intensity, whose appearance indicated submassive acute hepatitis (approximately 60% necrotic parenchyma) with no pathognomonic morphological characteristics, indicating a specific autoimmune origin (few plasma cells, absence of multinucleated cells, absence of a rosette formation). Cholestasis was noted, with an appearance reminiscent of sepsis. The gallbladder was normal.

On 4 July, the patient was discharged from hospital.

3.4. Causality

The food supplement's causality in the occurrence of these two cases of severe acute hepatitis was analysed by applying the method defined in the revised ANSES opinion of 10 July 2019 on updating the method for determining causality in reports of adverse effects in nutrivigilance (ANSES 2019). It was established by the Working Group (WG) on "Nutrivigilance".

3.4.1. Intrinsic score

The chronological score refers to the time taken for the adverse effect to appear, its progression and its recurrence if the products are reintroduced.

- In Case 2019-475, the onset time for the effect was found to be "compatible". As progression was favourable after the patient discontinued the food supplement, this was described as "suggestive". The Chewable Hair Vitamins® product was not reintroduced. Based on this information, the chronological score is C3[3].

- In Case 2019-480, the onset time for the effect was found to be "compatible". As the symptoms continued to worsen for almost a month and transplantation became necessary due to a life-threatening emergency, progression was described as "suggestive". The Chewable Hair Vitamins® product was not reintroduced. Based on this information, the chronological score is C3.

The aetiological score is determined after establishing a differential diagnosis for the observed effect.

- In Case 2019-475, there was a full aetiological investigation. An infectious cause remains highly unlikely on the basis of the tests performed. The consumption of mushrooms occurred after the onset of jaundice. Idiopathic autoimmune hepatitis with atypical biological expression is arguable but remains highly unlikely given the biological data and the lack of improvement on rapid and complete cessation of corticosteroid therapy. The underlying assumption is toxic hepatitis with histological simulation of autoimmune hepatitis. The aetiological score is therefore E3[4].

- In Case 2019-480, a full aetiological investigation was carried out including a complete pathological examination of the explanted liver. All aetiological tests were negative, in particular the test for autoimmune hepatitis, which was initially suggested and then ruled out. No confounding risk factor was detected. A disorder related to the recent pregnancy such as HELLP syndrome was ruled out. The aetiological score is therefore E3.

However, the experts note that in both these clinical cases, the same contraceptive (desogestrel, a progestin) was taken concomitantly with the Chewable Hair Vitamins® food supplement, and they cannot rule out a possible interaction.

According to the public drug database[5], there have been no reports of adverse liver effects of desogestrel. On the other hand, skin rashes are on the list of possible adverse effects.

However, the literature indicates that desogestrel (Karjalainen, Neuvonen, and Backman 2008) and certain vitamin- and mineral-based food supplements (Sasaki *et al.* 2017) may inhibit cytochrome CYP1A2, and some authors have suggested that a decrease in cytochrome CYP1A2 activity may be associated with a risk of hepatitis (Ma, Zhang, and Jia 2014).

[3] The chronological score ranges from C0 (zero) to C4 (high).

[4] The aetiological score ranges from E0 (another cause was identified) to E3 (all common causes were ruled out or the assessed product was formally incriminated).

[5] http://base-donnees-publique.medicaments.gouv.fr/

The intrinsic causality score, which results from the combination of the chronological score and the aetiological score, is therefore I4 for both cases, meaning that **the food supplement was very likely responsible for the occurrence of these two cases of severe acute hepatitis**[6].

3.4.2.Extrinsic score

The extrinsic causality score assesses the quality of the science demonstrating a causal relationship between consumption of an ingredient or a product and an adverse effect. It is based on data from the literature, on a given date.

In this case, the non-exhaustive literature search focused on the potential hepatotoxicity in humans of each ingredient in the food supplement Chewable Hair Vitamins®.

- **Vitamin A**

In addition to descriptions of toxicity in animals and the setting of an upper intake level for vitamin A (Penniston and Tanumihardjo 2006), the experts searched for clinical cases of hepatotoxicity related to oral consumption.

Four clinical cases related to vitamin A consumption and published in the literature are presented below. However, the route of exposure in these cases differs from that in the two cases involving Chewable Hair Vitamins® due to the dosage form of the product (chewing gum): due to absorption through the oral mucosa, the bioavailability of the ingredients may be higher for this route of administration than for the conventional oral route (Behra *et al.* 2012; Bhatt *et al.* 2016).

The first case involved a 45-year-old woman with a medical history of hypertension, type II diabetes, ischemic heart disease and hypothyroidism for which she was receiving appropriate drug therapy. Six years after starting a daily course of 25,000 IU of vitamin A, she developed jaundice accompanied by discomfort, anorexia, weight loss and diffuse pruritus. Hepatic fibrosis was diagnosed. The patient was unable to benefit from a liver transplant because of her heart disease, and died 10 weeks after discharge from hospital despite having discontinued the vitamin A supplementation (Kowalski *et al.* 1994).

The second case involved a 46-year-old patient who had had lymphoma and chemotherapy three years prior to the liver symptoms (jaundice accompanied by pruritus). After insertion of a biliary stent, a liver biopsy was performed that revealed cholestasis, intracellular necrosis and thrombosis in the dilated bile ducts, all signs that are pathognomonic for vitamin A toxicity. Cholestatic hepatitis without fibrosis was detected. Serology tests (viral, autoimmune, related to common toxins, metabolic) were negative. The patient had been taking Herbalife® products for twelve years, at a rate of one drink accompanied by two multivitamin tablets a day. In total, he took 5082 IU of vitamin A per day in addition to the intake from normal food. Two months after discontinuation of these products, his jaundice regressed and liver function recovered, including after stent removal (Ramanathan *et al.* 2010).

The third case involved three members of the same family (out of a total of five members, aged from 3 to 62 years) with hepatitis that could not be explained by infectious, metabolic or immunological disorders of the liver. They had been taking vitamin A for a prolonged period (intakes ranging from 20,000 to 45,000 IU per day for 7 to 10 years). The other two family members unaffected by liver disorders had not taken vitamin A. A liver biopsy in one of the patients confirmed the diagnosis of vitamin A toxicity. Six months to a year after discontinuing the vitamin A, the symptoms disappeared in all three vitamin A consumers. The authors concluded that consuming vitamin A over a prolonged period of time can cause significant hepatocellular injury (Minuk, Kelly, and Hwang 1988).

The fourth case was more recent, published in 2020, and concerned a 27-year-old woman who self-medicated with 10,000 IU of vitamin A per day for 18 months to treat her acne (Fox *et al.* 2020). She presented to the hospital emergency department, where a biopsy was performed. This showed a

[6] The intrinsic score ranges from I0 (excluded) to I4 (very likely).

parenchymal abnormality, with pericentral fibrosis, central venous thrombosis and prominent sinusoidal fibrosis. The appearance of liver cells containing fat vacuoles was consistent with hypervitaminosis A. The symptoms improved rapidly.

The four cases in the literature presented above correspond to chronic hepatitis and are associated with prolonged oral consumption of vitamin A. The doses administered are far higher than those ingested by consumers of the food supplement Chewable Hair Vitamins® (approximately 2600 IU according to the label or 3400 IU according to analyses, for 1 to 2 months[7]). As a reminder, the upper intake level (UL) established by EFSA for retinol administered orally (ingestion) is 3000 µg or 9990 IU (corresponding to total dietary intake, i.e. intakes from normal food, fortified foods and food supplements). On the basis of this UL and the vitamin A intake from normal food and fortified foods, the DGCCRF defined a maximum daily intake from food supplements of 1000 µg retinol equivalent, i.e. 3330 IU (DGCCRF 2019).

Therefore, the extrinsic causality score selected for this component is B1[8] (poorly documented).

- **Other ingredients**

The literature search did not identify any cases of liver damage related to the other ingredients in Chewable Hair Vitamins® (vitamins B5, B6, B8, B12, C, D, E, zinc, sodium selenite, glucose syrup, sugar, gelatine of bovine origin, dextrose, sorbitol, malic acid, coconut, palm and sunflower vegetable oils, carnauba wax, blackcurrant and strawberry flavourings, carmine).

3.4.3. Other cases recorded in the nutrivigilance database

To date, no other reports concerning the food supplement Chewable Hair Vitamins® have been recorded by the nutrivigilance scheme.

3.5. Conclusions of the WG and the CES

ANSES received two reports of severe acute hepatitis (whose severity was level 3 with life-threatening prognosis). According to the nutrivigilance method, the causality score for the food supplement Chewable Hair Vitamins® is "very likely" in both cases.

The food supplement is suspected of playing a role in triggering this hepatitis.

Vitamin A, one of the ingredients in this product, has hepatotoxic effects that have been identified in the literature, albeit under consumption conditions that differ greatly from those of the two consumers of the food supplement Chewable Hair Vitamins® (far higher doses and/or over much longer periods of time).

The product also contains other vitamins, minerals and numerous excipients.

If no single ingredient can explain the adverse effects observed, it is still possible that the adverse effect may be due to a complex effect of the combination of the product's many ingredients, also taking into account their inherent bioavailability due to the method of administering the product (chewing gum). Interactions with other substances (such as progestin) may also be involved. Lastly, contamination of the product or adulteration with a substance that was not screened for by the SCL cannot be ruled out.

[7] Equivalent to 800 µg (labelled value) and 1017 µg (measured value): 1 µg = 3.33 IU for vitamin A.

[8] The extrinsic score ranges from B0 (non documented) to B2 (well documented).

4. AGENCY'S CONCLUSION

The French Agency for Food, Environmental and Occupational Health & Safety (ANSES) received two reports of severe acute hepatitis involving consumption of the food supplement Chewable Hair Vitamins®.

ANSES adopts the conclusions of the Working Group on "Nutrivigilance" and the Expert Committee on "Human Nutrition".

For both of these cases, **it was considered very likely that the serious adverse event** – in this case severe acute hepatitis, in which one of the patients required a liver transplant – **was attributable to consumption of this product** (causality of I4, on a scale ranging from I0 = excluded to I4 = very likely). This food supplement contains numerous ingredients, mainly vitamins and minerals, and many excipients. No reports of liver damage associated with any of these ingredients under similar conditions of consumption have been identified in the literature to date.

ANSES considers that a complex effect of the combination of the product's many ingredients, an interaction with other substances (particularly oral contraceptives), or possible contamination or adulteration by a substance that was not screened for by the SCL are possible.

ANSES notes that Chewable Hair Vitamins® is a declared food supplement in France; it was registered by the DGCCRF in September 2019. Nevertheless, ANSES draws attention to the differences between the levels stated on the label and those measured for the analysed vitamins (a vitamin E level almost three times higher in one case), as well as the lack of details regarding the vitamin and mineral forms on the label of the product taken by one of the two consumers. In addition, the label of the analysed product did not correspond to the labelling declared to the DGCCRF.

At the European level, a request to EFSA's focal points revealed that, to date, out of the 37 countries approached, the product has been declared in at least 4 countries and 25 countries have indicated that they have not received any reports related to the product Chewable Hair Vitamins®.

In view of all these points, ANSES recommends that women taking oral contraception should not take the food supplement Chewable Hair Vitamins®.

Lastly, ANSES reiterates its usual recommendations concerning food supplements:

- Consumers should:
  - notify a healthcare professional of any adverse effect occurring after consumption of a food supplement;
  - comply with the conditions of use specified by the manufacturer;
  - avoid taking food supplements on a multiple, prolonged or repeated basis throughout the year without having sought the advice of a healthcare professional (doctor, dietician, etc.);
  - exercise great vigilance with regard to improper claims;
  - exercise great vigilance regarding the purchase of products sold through alternative channels (internet, gyms, etc.) and without personalised advice from a healthcare professional.
- Healthcare professionals should communicate cases of adverse effects they suspect of being associated with the consumption of food supplements, and the Agency invites them to report these to the nutrivigilance scheme.

Dr Roger Genet

KEYWORDS

Hépatites aiguës sévères, complément alimentaire, Chewable Hair Vitamins®, vitamine A

Acute hepatitis, food supplement, Chewable Hair Vitamins®, vitamin A

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ANNEX 1

Presentation of the participants

PREAMBLE: The expert members of the Expert Committees and Working Groups or designated rapporteurs are all appointed in a personal capacity, *intuitu personae*, and do not represent their parent organisation.

WORKING GROUP

- "Nutrivigilance" WG 2018-2021

Chair

Mr Pascal CRENN – University Professor – Hospital Practitioner (AP-HP/Paris-Saclay University) – Specialities: hepato-gastroenterology, nutrition

Members

Ms Catherine ATLAN – Head of Department (Luxembourg Hospital Centre) – Specialities: metabolic diseases, nutrition and endocrinology

Mr Alain BOISSONNAS – Retired, University Professor – Hospital Practitioner (University Hospital Paris-Sud) – Speciality: internal medicine

Ms Patricia BOLTZ – Hospital Practitioner (Poison Control and Monitoring Centre of Nancy University Hospital) – Speciality: clinical toxicology, toxicovigilance

Mr Nicolas DANEL BUHL – Medical Nutritionist (Artois Regional Hospital Grouping, GHT) – Speciality: nutrition

Mr Michel GERSON – Practitioner – Speciality: endocrinology, nutrition

Mr Raymond JIAN – Retired, University Professor – Hospital Practitioner (Georges Pompidou European Hospital) – Speciality: hepato-gastroenterology

Mr Pascal PLAN – Substitute Doctor – Speciality: general medicine, geriatrics, palliative care

Mr Jean-Marie RENAUDIN – Hospital Practitioner (Emilie Durkheim Hospital Centre) – Specialities: allergology, occupational medicine

Mr Philippe SCHERER – Retired – Speciality: allergology, occupational medicine

Mr Claude SICHEL – Retired, General Practitioner – Speciality: general medicine

Mr Jean-Fabien ZAZZO – Retired, Hospital Practitioner (Antoine Béclère Hospital – AP-HP) – Specialities: anaesthesia and resuscitation, nutrition

EXPERT COMMITTEE

The work that is the subject of this report was monitored and adopted by the following Expert Committee:

- CES on "Human Nutrition" – 2018-2021

Chair

Mr François MARIOTTI – Professor (AgroParisTech) – Specialities: metabolism of proteins, amino acids, nutritional requirements and recommendations, postprandial metabolism, cardiometabolic risk

Members

Mr Frédérik BARREAU – Research Manager (Inserm) – Specialities: chronic inflammatory intestinal diseases, microbiota, host-microbe relationships, barrier function of the intestinal mucosa

Ms Charlotte BEAUDART – Research Manager (University of Liège) – Specialities: epidemiology, public health, meta-analyses, sarcopenia

Ms Catherine BENNETAU-PELISSERO – Professor (Bordeaux Sciences Agro) – Specialities: phyto-oestrogens, isoflavones, endocrine disruptors, bone health, food supplements

Ms Clara BENZI-SCHMID – Federal Food Safety and Veterinary Office (FSVO), Switzerland – Specialities: revision and updating of legal bases of foodstuffs

Ms Marie-Christine BOUTRON-RUAULT – Research Director (CESP Inserm) – Specialities: nutritional epidemiology and cancer, digestive system

Ms Blandine de LAUZON-GUILLAIN – Research Director (INRA, CRESS) – Specialities: epidemiology, infant nutrition, nutrition of pregnant and breastfeeding women, public health

Ms Amandine DIVARET-CHAUVEAU – University Hospital Practitioner (Nancy Regional University Hospital) – Specialities: allergology, epidemiology, complementary feeding, breastfeeding

Ms Christine FEILLET-COUDRAY – Research Director (INRA, Montpellier) – Specialities: metabolism of minerals, oxidative stress

Ms Amandine GAUTIER-STEIN – INRA Research Manager (Inserm “Nutrition, diabetes and brain” unit) – Specialities: energy metabolism, neuroendocrinology, gut-brain axis

Mr Jacques GROBER – University Lecturer (AgroSup Dijon) – Specialities: nutrition, lipids, metabolism of lipoproteins

Mr Jean-François HUNEAU – Professor (AgroParisTech) – Speciality: human nutrition

Ms Emmanuelle KESSE-GUYOT – Research Director (INRA, UMR Inserm U1153/INRA U1125/CNAM/University of Paris 13) – Specialities: epidemiology, nutrition and pathologies, nutrition and public health, food sustainability

Ms Corinne MALPUECH-BRUGERE – University Professor (University of Clermont Auvergne) – Specialities: human nutrition, metabolism of macro- and micro-nutrients

Ms Christine MORAND – Research Director (INRA Clermont-Ferrand) – Specialities: prevention of vascular dysfunctions and related diseases, micro-constituents of plants

Ms Beatrice MORIO-LIONDORE – Research Director (INRA Lyon) – Specialities: human nutrition, lipid and energy metabolism

Ms Anne-Sophie ROUSSEAU – University Lecturer (University of Côte d'Azur, UMR/INSERM 1065) – Specialities: nutrition and physical activity, oxidative stress, immunometabolism

Mr Stéphane WALRAND – University Professor-Hospital Practitioner (University of Clermont Auvergne and Gabriel Montpied University Hospital in Clermont-Ferrand) – Specialities: pathophysiology, protein metabolism, vitamin D, amino acids

ANSES PARTICIPATION

Scientific coordination

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Scientific contribution

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