

Supplementary material

Supplementary Figure S1. Certificate of analysis (COA) for beeswax alcohol (BWA) from inspection of imported food, issued by Korean FDA

Print date: October 5, 2022				
Inspection results for imported food, etc.				
Income declaration person (Import shipper)	Mutual	Reidel Korea Co., Ltd.	Representative	Lee Kyung-ge
	address	Room 203, 2nd floor, 13-10 Gangnam-daero 39-gil, Seocho-gu, Seoul (Seocho-dong, Halla Viveldi Studio)		
Registration Number	202200608546		Date of receipt	September 26, 2022
product name				
Type of inspection				
Requesting Agency				
Request number				
Inspection Agency				
Judgment				

Test/Inspection Item name	Standard	Result	Judgment	Note
Asarone				010-1) Sample
Octacosanol				010-1) Sample
1-triacotanol	① 1-tetracosanol(C24): 60~150mg/g ② 1-hexacosanol (C26)	292.25	fitness	Beeswax alcohol (No. 2010-1) sample
1-dotriacotanol	① 1-tetracosanol(C24): 60~150mg/g ② 1-hexacosanol (C26)	222.97	fitness	Beeswax alcohol (No. 2010-1) sample
1-tetracosanol, 1-hexacosanol, 1-octacosanol, 1-triacotanol, 1-dotriacotanol,	① 1-tetracosanol(C24): 60~150mg/g ② 1-hexacosanol (C26)	859.79	fitness	Beeswax alcohol (No. 2010-1) sample
lead	0.5 or less	0.1	fitness	Beeswax alcohol (No. 2010-1) sample
total arsenic	0.1 or less	Not detected	fitness	Beeswax alcohol (No. 2010-1) sample
total mercury	0.5 or less	Not detected	fitness	Beeswax alcohol (No. 2010-1) sample
cadmium	0.5 or less	Not detected	fitness	Beeswax alcohol (No. 2010-1) sample
acetone	30.0 or less	2.73	fitness	Beeswax alcohol (No. 2010-1) sample
hexane	5.0 or less	0.44	fitness	Beeswax alcohol (No. 2010-1) sample
1-tetracosanol	① 1-tetracosanol(C24): 60~150mg/g ② 1-hexacosanol (C26)	63.67	fitness	Beeswax alcohol (No. 2010-1) sample
1-Hexacosanol	① 1-tetracosanol(C24): 60~150mg/g ② 1-hexacosanol (C26)	114.28	fitness	Beeswax alcohol (No. 2010-1) sample

Test/Inspection Item name	Standard	Result	Judgment	Note
coliforms	voice	voice	fitness	Beeswax alcohol (No. 2010-1) sample
fatty alcohol	① 1-tetracosanol(C24): 60~150mg/g ② 1-hexacosanol (C26)	30.62	fitness	Beeswax alcohol (No. 2010-1) sample

September 30, 2022

Director of the Korea Food Science Research Institute, an affiliate of the Korea Food Industry Association

Inspection results for imported food, etc.

importer name (Import shipper)	Mutuel	Reidel Korea Co., Ltd.	importer address	Seoul, Korea
address	Room 205, 2nd floor, 15-10 Gangnam-daero 89-gil, Seocho-gu, Seoul (Seocho-dong, Halla Vivald Studio)			
Request Number	202200608546		Date of receipt	September 26, 2022
product name				
Type of inspection				
Requesting Agency				
Request number				
importer Agency				
Judgment				

정보공개용 자료

Test/Inspection Item name	result	result	Judgment	note
Desulforylchlorosilide				
glimpepride				
glibenclamide	Not detected	Not detected	Fitness	Sample (T)
glee closet	Not detected	Not detected	Fitness	Sample (T)
glyphigt	Not detected	Not detected	Fitness	Sample (T)
nomeobardenafil	Not detected	Not detected	Fitness	Sample (T)
Nomeosildenafil	Not detected	Not detected	Fitness	Sample (T)
Nitrodenafil	Not detected	Not detected	Fitness	Sample (T)
demethyl reddenafl	Not detected	Not detected	Fitness	Sample (T)
desulfovadenafil	Not detected	Not detected	Fitness	Sample (T)
Desmethylsibutramine	Not detected	Not detected	Fitness	Sample (T)
Didesmethylsibutramine	Not detected	Not detected	Fitness	Sample (T)
Dimethylsildenafil	Not detected	Not detected	Fitness	Sample (T)

Test/Inspection Item name	result	result	Judgment	note
Dimethylthiosildenafil	Not detected	Not detected	Fitness	Sample (T)
Dichlorodenafil	Not detected	Not detected	Fitness	Sample (T)
Levothyroxine	Not detected	Not detected	Fitness	Sample (T)
Liocronine	Not detected	Not detected	Fitness	Sample (T)
Mirodenafil	Not detected	Not detected	Fitness	Sample (T)
vardenafil	Not detected	Not detected	Fitness	Sample (T)
Benzylsildenafil	Not detected	Not detected	Fitness	Sample (T)
pseudovardenafil	Not detected	Not detected	Fitness	Sample (T)
Sibutramine	Not detected	Not detected	Fitness	Sample (T)
Cinnamildenafil	Not detected	Not detected	Fitness	Sample (T)
Slidenafil	Not detected	Not detected	Fitness	Sample (T)
Cyclopentinafil	Not detected	Not detected	Fitness	Sample (T)
Aminotadalafil	Not detected	Not detected	Fitness	Sample (T)
Acetylvaridenafil	Not detected	Not detected	Fitness	Sample (T)
ephedrine	Not detected	Not detected	Fitness	Sample (T)
orlistat	Not detected	Not detected	Fitness	Sample (T)
Oxohongdenafil	Not detected	Not detected	Fitness	Sample (T)
octylnortadalafil	Not detected	Not detected	Fitness	Sample (T)
Udenafil	Not detected	Not detected	Fitness	Sample (T)
xanthoxanthraphyll	Not detected	Not detected	Fitness	Sample (T)
Thiosildenafil	Not detected	Not detected	Fitness	Sample (T)
Thioquina Piperipil	Not detected	Not detected	Fitness	Sample (T)
Chiohomosildenafil	Not detected	Not detected	Fitness	Sample (T)
Carbodenafil	Not detected	Not detected	Fitness	Sample (T)

Test/Inspection Item name	Reference	result	Judgement	note
chlorodenafil	Not detected	Not detected	Fitness	Sample (1)
Chloropretadalaflil	Not detected	Not detected	Fitness	Sample (1)
tadalaflil	Not detected	Not detected	Fitness	Sample (1)
Fenfuramine	Not detected	Not detected	Fitness	Sample (1)
piperidino reddenaflil	Not detected	Not detected	Fitness	Sample (1)
Hydroxyvarденаflil	Not detected	Not detected	Fitness	Sample (1)
Hydroxythiohomosildenafilil	Not detected	Not detected	Fitness	Sample (1)
Hydroxychlorodenaflil	Not detected	Not detected	Fitness	Sample (1)
Hydroxyhomosildenafilil	Not detected	Not detected	Fitness	Sample (1)
Hydroxydenaflil	Not detected	Not detected	Fitness	Sample (1)
homosildenafilil	Not detected	Not detected	Fitness	Sample (1)
Homodenaflil	Not detected	Not detected	Fitness	Sample (1)
fluoxetine	Not detected	Not detected	Fitness	Sample (1)
Sennoside	Not detected	Not detected	Fitness	Sample (1)
Yohimbine	Not detected	Not detected	Fitness	Sample (1)
Phenolphthalein	Not detected	Not detected	Fitness	Sample (1)
Ikarin	Not detected	Not detected	Fitness	Sample (1)
N-nitrosafenfuramine	Not detected	Not detected	Fitness	Sample (1)
Desmethylpiperazinypropoxyiside Nafli	Not detected	Not detected	Fitness	Sample (1)
Acetaminotadalaflil	Not detected	Not detected	Fitness	Sample (1)
Demethyltadalaflil	Not detected	Not detected	Fitness	Sample (1)
avanafil	Not detected	Not detected	Fitness	Sample (1)
Methylhydroxyhomosildenafilil	Not detected	Not detected	Fitness	Sample (1)
Propoxyphenythiosildenafilil	Not detected	Not detected	Fitness	Sample (1)

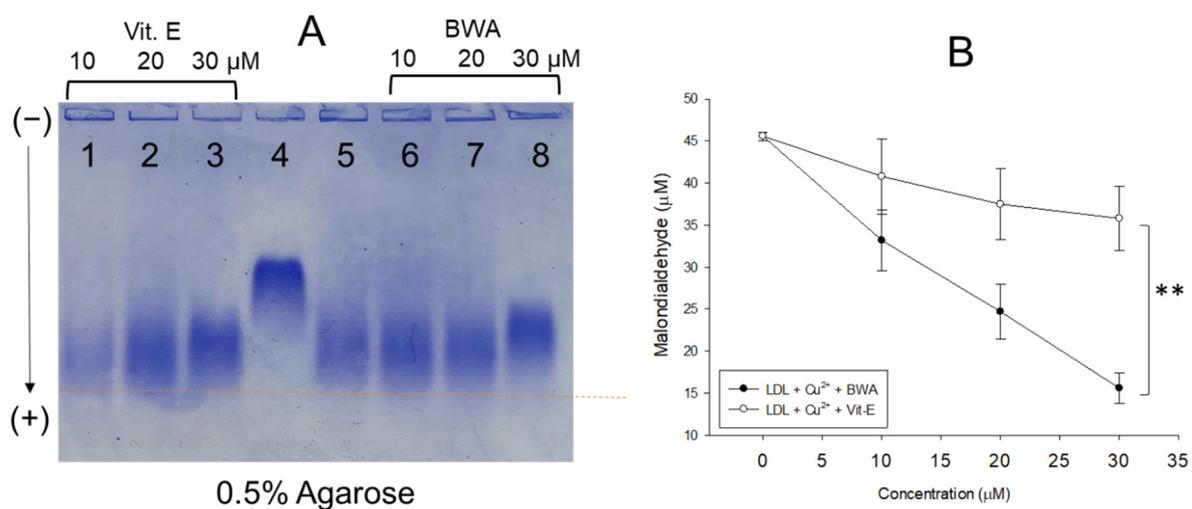
Test/Inspection Item name	Reference	result	Judgement	note
Propoxyphenythioayidenafilil	Not detected	Not detected	Fitness	Sample (1)
Propoxyphenythiohydroxyhomo Sildenafilil	Not detected	Not detected	Fitness	Sample (1)
Propoxyphenythiohomosildenafilil	Not detected	Not detected	Fitness	Sample (1)
Homotadalaflil	Not detected	Not detected	Fitness	Sample (1)
Chloroxybutramine	Not detected	Not detected	Fitness	Sample (1)
cis-cyclopentyltadalaflil	Not detected	Not detected	Fitness	Sample (1)
trans-cyclopentyltadalaflil	Not detected	Not detected	Fitness	Sample (1)
Isopropyl Nortadalaflil	Not detected	Not detected	Fitness	Sample (1)
Descarbonsildenafilil	Not detected	Not detected	Fitness	Sample (1)
Cascaroside	Not detected	Not detected	Fitness	Sample (1)
Dichlopropyl Carbodenaflil	Not detected	Not detected	Fitness	Sample (1)
Chloroxyphenramine	Not detected	Not detected	Fitness	Sample (1)
Acrylic acid	Not detected	Not detected	Fitness	Sample (1)
Gedenaflil	Not detected	Not detected	Fitness	Sample (1)
Imidazogettriazinone	Not detected	Not detected	Fitness	Sample (1)

These test results are limited to the samples requested for testing, and the test results must not be used for false, exaggerated labeling, advertising, or slander purposes. If you wish to use them for labeling or advertising, the entire test results must be truthfully displayed. It must be advertised.

September 29, 2022

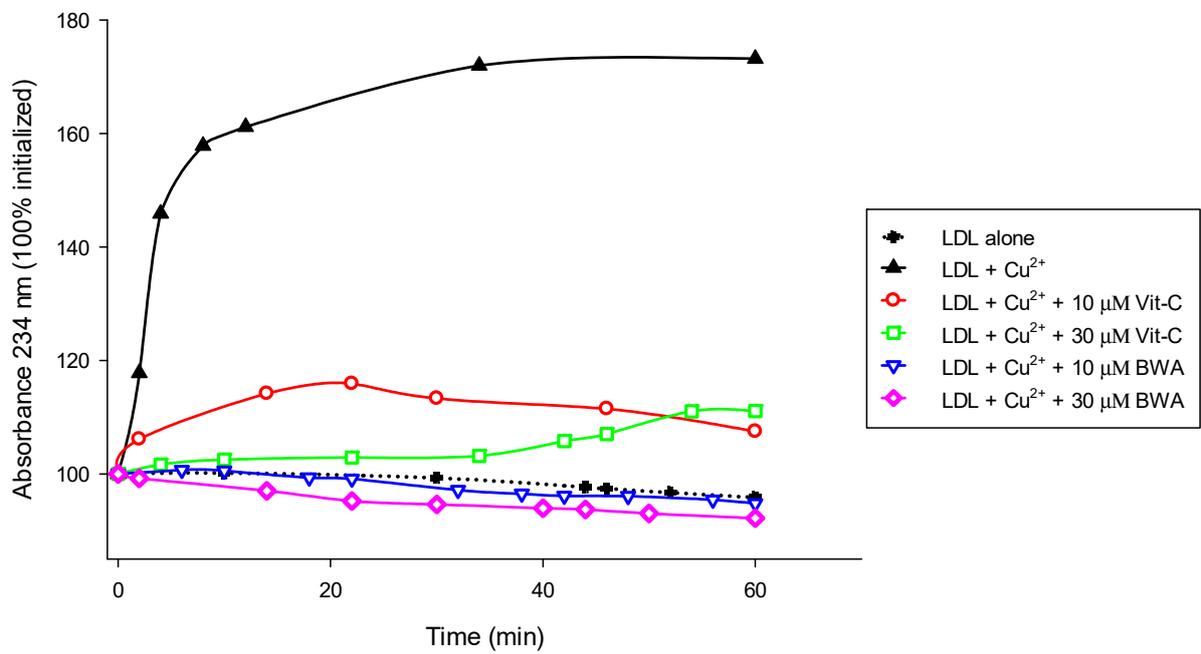
Seoul Regional Food and Drug Safety Administration





Supplementary Figure S2. Effect of beeswax alcohol (BWA) on CuSO_4 induced oxidation of LDL.

- A.** Electrophoretic mobility of apo-B fraction of LDL. Lane 1, 2, 3, represent LDL+ CuSO_4 treated with 10, 20, 30, μM vitamin E. Lane 4 represents Native LDL, Lane 5 represents LDL+ CuSO_4 (Ox LDL). Lane 6, 7, 8, represent LDL+ CuSO_4 treated with 10, 20, 30, μM BWA. Electrophoresis was performed on 0.5% agarose gel using Tri-EDTA buffer (pH 8.0) at a constant voltage (50 V). Red-dotted line indicates the similar electromobility of oxidized LDL (lane 5) and Vit-E treated ox-LDL (lane 1-3).
- B.** Quantification of malondialdehyde in the LDL by thiobarbituric acid reactive substances (TBARS) assay. **, $p < 0.01$



Supplementary Figure S3. Continuous monitoring of conjugated diene detection assay with either beeswax alcohol (BWA) or vitamin C (Vit C) under LDL oxidation by cupric ion treatment.