

ID Verified™ Report		ID VERIFICATION STATUS: <u>VERIFIED</u>
CLIENT NAME [redacted]		DATE OF REPORT May 5, 2015
INGREDIENT COMMON NAME Bilberry Fruit Extract (20% anthocyanins by HPLC)	FAMILY/GENUS/SPECIES AND PLANT PART (IF BOTANICAL, MICROBIAL OR ANIMAL ORIGIN) <i>Vaccinium myrtillus</i> (fruit), Ericaceae	
INGREDIENT COUNTRY OF ORIGIN Norway	MANUFACTURING FACILITY NAME [redacted]	
INGREDIENT DESCRIPTION [redacted]	MANUFACTURING FACILITY ADDRESS [redacted]	
INGREDIENT PROCESS SUMMARY Solvent extraction and spray drying	SOLVENTS, PROCESSING AIDS, ENZYMES AND OTHER ADDITIVES Ethanol and maltodextrin (Roquette Glucidex F157)	
PRODUCT CODE [redacted]	LOT NUMBER [redacted]	
DATE OF MANUFACTURE March 2015	DATE OF EXPIRY March 2017	

IDDI™ DOCUMENT CHECKLIST
<ul style="list-style-type: none"> X Ingredient Specification (includes common and official name of ingredient, country of origin, form (e.g. extract), potency, purity, and lists all processing aids, solvents or other inputs in the manufacturing process) X Identity Test Method (including instrumentation, method #, reference standard COA, and reference to published method, if applicable) X Identity Test Report (Includes method or method reference, images of TLC plates, HPLC chromatograms, and other raw data) X Other (list documents requested) <p><i>--HPLC report showing absence of amaranth dye (Red #2)</i></p>

COMMON ADULTERANTS KNOWN

ADULTERANT	LIKELIHOOD OF PRESENCE	RATIONALE/RECOMMENDATIONS	SOURCE
Red #2 (amaranth dye)	nil	HPLC report for this lot showed absence of peaks at typical amaranth dye retention times	AHPA Guidance: Known Adulterants rev July 2012
Blueberries	nil	Low anthocyanin content of commercial blueberry species preclude their use in higher purity HPLC-standardized bilberry extract	Published data on anthocyanin content of blueberry species

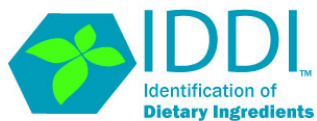


Mulberry/chokeberry/cranberry	nil	HPLC report showed typical peak fingerprint of bilberry, lacking profile of mulberry/chokeberry/cranberry. Relatively lower anthocyanin content and costing of adulterants preclude their attractiveness as economic adulterant.	Client documentation; J. Ag. Food Chem 2014 12;62 (45) 10998-1004; Herbalgram 96:64-93
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ACCEPTED IDENTITY TEST METHODS

THE FOLLOWING SECTION IS COMPLETED FOR PRODUCTS FROM BOTANICAL, MICROBIAL OR ANIMAL ORIGIN, INCLUDING ENZYMES, PROBIOTICS, FIBER AND OTHER COMPLEX MIXTURES. METHODS IN BOLDFACE REPRESENT THE SUPERIOR PREFERRED METHOD FOR IDENTIFICATION, ALTHOUGH OTHER METHODS MAY BE REQUIRED FOR UNEQUIVOCAL ID.

TEST	DESCRIPTION/COMMENT	PUBLISHED IN	ACCEPTED (Y/N)
MACROSCOPY	Visual examination of raw material (whole fruit) at manufacturing facility	Client documentation	Y
MACROSCOPY	Visual examination of raw material (whole fruit)	AHP, Herbalgram 96:64-93, Ph. Eur	Y
MICROSCOPY	Microscopic examination of bilberry	AHP, Herbalgram 96:64-93, Ph. Eur	Y
MICROSCOPY	Microscopic examination of bilberry from client monograph	Client documentation	Y
ORGANOLEPTIC	Characteristic of bilberry extract	Client specification	Y
ORGANOLEPTIC	Characteristic of bilberry extract	AHP, Herbalgram 96:64-93, Ph. Eur	Y
SPECTROMETRY (UV)	Numerous compendia and expert comments explain why UV-spec is not an acceptable method for identity of bilberry extracts	AHP, Herbalgram 96:64-93, Ph. Eur	N
VISUAL (pH color test)	Comparison of authentic bilberry diluted aqueous solution to test sample at pH 10	Various	Y
CHROMATOGRAPHY (HPLC)	HPLC chromatogram and test report from independent lab showing characteristic fingerprint of bilberry compared to authenticated reference standard, conforming with compendia monograph	Client documentation	Y
CHROMATOGRAPHY (HPLC)	HPLC chromatogram and test report from independent lab showing characteristic fingerprint of bilberry compared to authenticated reference standard, conforming with compendia monograph	AHP, Herbalgram 96:64-93, Ph. Eur	Y



CHROMATOGRAPHY (TLC)	HPTLC test report from independent lab showing absence of amaranth band, conforming with compendial monograph	Client documentation	Y
CHROMATOGRAPHY (TLC)	HPTLC plate showing absence of amaranth band	AHP, Herbalgram 96:64-93, Ph. Eur	Y

ADDITIONAL COMMENTS AND RECOMMENDATIONS	
Client documentation and identity monographs were exemplary. Recommendations include: add lot# and sourcing information to test reports of authenticated reference standards used.	

This report has been reviewed and approved by a qualified Identity of Dietary Ingredients (IDDI) representative:

Name: _____ Signature: _____

Title: _____ Date: _____