

Breast Body Spray (Bbs) Extraction and Extractor

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ABSTRACT

Breast Cancer is the fatal disease in modern era. It is associated with socio-hormonal disturbance also. Presented spray form extract is the one among others therapeutic approaches i.e. glycosylated extract and PASTRIKINI of author toward medication for breast cancer. Processed extract extracted from *Calotropis gigantea* in a special extractor having four sections to extract with the help of n-Hexane. Higher numbers of the circulating processes in extractor lowered the high volatile and low %aged components of Extract. It had various bioactive components, GC-MS had been shown structural data of 17 bio-active compounds in one circulating process while existing available data revealed that these components belong to Free fatty acids (FFA's), anti-oxidants, hormonal regulators, Cell signaling, Anti-tumor, and cytotoxic agents. It is assumed that FFA's specially monounsaturated FFA's may disrupt skin barrier and may enhance the permeability for other compounds exhibiting an anti-oxidant, a hormonal regulating, a cell signaling, an antitumor, and a cytotoxic effect. In this way this extract may modulate physiological processes such as skin barrier homeostasis, inflammation, and wound healing etc.

KEYWORDS

ERBB2; FISH; CMA; GEA

TECHNICAL FIELD

n-Hexane as a solvent optimized fatty acids either saturated form or unsaturated form from hydraulic compressed seed [1]. Oils have long been used on the skin not only for cosmetic but also medical purposes because they have been found to have many positive physiological benefits. Oil application may act as a protective barrier to the skin by an occlusive effect, allowing the skin to retain moisture, resulting in decreased transepidermal water loss (TEWL) values. Additionally, topical products have the benefit of higher bioavailability in the skin and having a localized effect rather than systemic effects. Although triglycerides do not penetrate deeper in stratum corneum (SC), glycerol contributes to the SC hydration. Free fatty

acids (FFAs) especially monounsaturated FFAs may disrupt skin barrier that act as permeability enhancers for other compounds present in oils [2]. Other components such as phenolic compounds exhibit an anti-oxidant effect and may modulate physiological processes such as skin barrier homeostasis, inflammation, and wound healing.

BACKGROUND OF ART

Skin as the largest organ of body works likely necessary interface between the internal and the external environment. It continuously protects body from various stimuli likely irritants, ultraviolet radiations, micro-organisms, and allergens as noxious stimuli. Its distinguished role is a direct result of its structure and makeup, especially the most superficial part, the

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epidermis. The main cellular component of the epidermis includes keratinocytes, but there are also melanocytes, Merkel cells, gamma delta T-lymphocytes, and Langerhans cells. In the basal layer of epidermis, Keratinocytes proliferate upward to develop the granular layer and the spinous layer. Beyond the granular layer, the keratinocytes terminally differentiate into corneocytes in the horny layer. In the outmost part of epidermis, corneocytes (compact keratinocytes without nuclei), together with the intercellular lamellar compartment (lipids), contribute to the structure and function of the stratum corneum (SC). SC structure is like a brick wall where corneocytes as a “bricks” are surrounded by the intercellular lipid lamellae that act like the “mortar” to maintain skin permeability barrier as well as SC integrity [3]. Lipids likely free fatty acids, ceramides precursors, and cholesterol parts are synthesized at SC in the keratinocytes and then released into SG-SC interface from the lamellar bodies (LBs) while remaining lipids are secreted onto the skin surface from the sebaceous glands (sebum). Permeability barrier composed of free fatty acids, ceramides, and cholesterol provided by the intercellular lipid-enriched matrix. SC lamellar membranes comprising saturated FFAs of significantly longer chain length in between C16 and C26. Palmitic acid (C-16) and stearic acid (C-18) each 10% (mass/mass) belong to main FFAs in the lamellar membranes (Kang, Ho, & Chan, 2006). SC behaves not only as anti-microbial barrier but also permeability barrier. The anti-microbial barrier is due to the weak acidity of skin surface, anti-microbial peptides within inter-cellular compartment, and free sphingoidal bases formed from epidermal ceramides [4]. In the presence of dermatitis, the hydration of the SC decreases and trans-epidermal water loss (TEWL) increases [5]. In clinical practice, the measure of TEWL is an important indicator of skin barrier function. Additionally, skin dryness (with or without clinical desquamation) is often associated to

inferior barrier function [6]. It has been shown that emollient use for eczematous dermatitis such as atopic dermatitis (AD) improves barrier function by restoring hydration at SC and reducing TEWL [7]. Wound healing (WH) process comprised four phases: Hemostasis, inflammation, proliferation, and tissue remodeling [8]. In the hemostasis phase, the clotting cascade is instantly activated following an injury, creating a temporary wound matrix [9]. The inflammation phase consists of an innate immune response crucial in the breakdown and cleanup of tissue and pathogen debris at the site of injury. Polymorpho-nuclear neutrophils (PMNs) release reactive oxygen species (ROS) and nitric oxide that facilitate degradation of foreign organisms and initiate phagocytosis of pathogens. Additionally, PMNs secrete high levels of PMN collagenase, elastase, and matrix metalloproteinases (MMPs), which break down damaged cells and extracellular matrix [10]. Macrophages work through phagocytosis of pathogens and cell debris [11]. Similarly, ROS and their oxidative reaction products present in the wound may also play a major role in tissue damage. The skin daily encounters with exogenous stimuli. Various stimuli likely irritants, ultraviolet radiations, micro-organisms, and allergens as noxious stimuli sometimes injured and/or infected the skin that lead to wound, dermatoses inflammation, skin aging, or skin carcinogenesis. Inflammation takes place in response to these damages to the normal skin barrier. At the molecular level, the inflammatory response participates in a series of complex repair pathways related to the innate immune response, cutaneous differentiation, and skin barrier repair [8]. Various plant parts of *Calotropis gigantea* had not only phytochemical importance but also pharmacological importance [8]. Studies about various parts of plant revealed its effect as antimicrobial [12,13], antibacterial [14], cytotoxic [15,16], apoptotic [17,18], anti-oxidant, antitumor [19], analgesic [20], wound healing [21] etc. Alcoholic and/or other extract due to

high content of cardiac poisons more toxic as compared to water soluble extract [22] while centrifugation [23] technique used to obtain crude enzyme (latex protease) for studying enzyme activities. Inflammation and infection of mammary gland known as Mastitis mostly caused by *E. coli* [24] which controlled through suppressing microbial activities like *E. coli* by using metabolites present in the leaves of *Calotropis gigantea* [13]. Extracts from *Calotropis gigantea* contained cardiac glycoside that observed as anti-cancer [25]. Protease as anti-clotting agent for milk and blood strain [23]. Cardiac glycoside increased the calcium induce calcium release that related with contraction of muscles through Ca^{++} and Ca^{++} channels activation [26] and thus increased heart rate as like oxytocin [27]. Flavonoid as anti-oxidants and

anti-allergic inhibited the release of chemical mediators [28].

SUMMARY

In current disclosure, the claimed FFA's, anti-oxidants, hormonal regulators, Cell signaling, Anti-tumor, and cytotoxic agents were extracted in extractor (design for registration applied) are summarized in Table 1 & Table 2.

BRIEF DESCRIPTION

Parts of extractor

Part A: Extracting Separator

Part B: Collecting tank (solvent vaporizer)

Part C: AB connecting condenser

Part D: Collecting condenser

S. No.	Description	Compounds
1	Hormonal modulator	4,5,6-trimethyltetrahydroxy 1,3-oxazine-2-thione ; pyrrolidine-2-carboxylic acid amides, N-tbutyloxycarbonyl-N-[2-{1- pyrrolidyl ethyl} ; (z) 7- hexadecenal
2	Anti-oxidant	benzenepropanoic acid 3 5- bis(1 1-dimethylethyl)-4- hydroxy- methyl ester ; IONOL ; 3,5-Di-t-butyl-4- meyoxy-1,4- dihydrobenzaldehyde
3	FFA's & Cell signaling	hexadecanoic acid methyl ester (FFA); octadecanoic acid (stearic acid) methyl esters; Octadecenamid; 4-tbutyl-2-(1-methyl-2- nitroethyl) cyclohexanone
4	Anti-tumor, cytotoxic	tetradecanoic acid ; Formylanthraquinone
5	Anti-microbial activity	Benzothiazole
6	Personal care product	di-n-octyl phthalate, di-iso-octyl phthalate

Table 1: Categorized Compounds.

Examples

Presented disclosure of processed extract was checked after glycation in another article "Glycated Extract" of author. Nipple erecting, breast health, and milk fat was focusing point in given examples.

Example 1: Erecting of nipple

1cc liquid form glycated extract IV injected in female virgin rabbit. Tightening and erecting of nipple was observed before another dose after 24 hours

Example 2: MVD 52/p

Veterinary doctor Dr. Aamir Mustafa and Veterinary assistant Mr. Ahsan Ahmed supervised the application of disclosure glycated extract at MVD 52/P and expressed

result (Letter 1) as enhancement of avg. milk of goat from 1L to 1.25L. Also provided the pictures (Figure 1) of the mammary gland before and after said glycated extract.

Example 3: KBD dairy farm house

Farm owner expressed (Letter 3) improvement in milk quantity, LR and fats from 14.75 L to 15.25 L, from 26 to 27, and from 3.8 to 4.0 respectively.

Example 4: Viscosity and milk smell

Avg. 1.25 L milk quantities of four buffaloes increased in local spot of Mr. Dilawar. He described (Letter 5) viscosity increased by weight of specific pot from 675 g to 825 g. Milk smell vanishing was his most appreciating expression.

Peak#	Compounds	Description	% Aggregate	Reference
2	Benzothiazole	As an alkaloid naturally occurring nitrogen and sulfur containing compound Toxic toward micro-organism and interfere with membranebond (co)enzyme	2.22	(Moody & H.Veracht ert) [29,30]
	4- Cyanothiophenol	Thiophenolbased molecule modified the SERS-active substrate, SERD= surfaceenhanced Raman scattering for characterization of anti-biotic resistant bacteria	>1%	(Fang Sun, 2017) (Yu, 2018) [31,32]
3	4,5,6- trimethyltetrahydroxy 1,3-oxazine2-thione	Progesterone receptor modulator	1.13	(Andrew Fensome, 2005) [33]
	pyrrolidine-2- carboxylic acid amides, N-tbutyloxycarbony 1-N-[2- {1- pyrrolidyl ethyl]	Regulation hormone	>1%	(Voelter) [34]
	Hexyl-2,3,4- triflourobenzoate	Analog hexyl nicotinate increase cutaneous blood flow	>1%	(C.B. BUNKER, 1988) [35]
	Lysine	Essential amino acid, repair tissues	>1%	
4	butylated hydroxyl toluene (BHT) IONOL	In cosmetics with safe range, anti-radical and anti-oxidant	36.1	(Lanigan RS, 2002) (Alinkina ES, 2012) [36,37]
	Terbutol	although increase liver weight but not involved in hepatic damage seriously		(Suzuki T, 2001) [38]
5	3,5-Di-t-butyl-4- meyoxy-1,4- dihydrobenzalde hyde	dihydrobenzalde hyde protected skin cell from UV and reduced cellular components injury	2.7	(Hyun YJ, 2012) [39]
6	4-t-butyl-2-(1- methyl-2- nitroethyl) cyclohexanone	Alkyl substituted derivatives of cyclohexanone act as picrotoxin receptor	2.4	(Holland KD, 1990) [40]
7	tetradecanoic acid	Myristic acid used protective as anti-tumor effect	2.06	(Galdiero F, 1994) [41]
8 & 16	hexadecanoic acid methyl ester hexadecanoic acid (palmitic acid) methyl esters FFA	Intercellular signaling and communication. Humane milk for infant contained secondary ester of palmitic acid have relatively high absorbability.	5.30 + 5.87 + 1.92	(Albert B. Flavier, 1997) (Jensen RG, 1978) [42,43]
9	benzenepropanoi c acid 3-5-bis(1 1- dimethylethyl)- 4- hydroxymethyl ester	Anti-oxidant	2.09	
10	Ascorbic acid 2,6 dihexanedecenoate		>1%	
11 & 13	octadecanoic acid (stearic acid) methyl esters. FFA	Stearic acid incorporated lower for plasma triglycerides and cholesterol ester and higher for phosphatidylrrrc holine as compared to palmitic acid.	2.59 + 1.38	(EA, 1994) [44]
12	(z) 7- hexadecenal	Act as a most effective pheromone among the other hexadecenal and hexadecenol	3.16	(Teal PE, 1986) [45]
14	Imidazole [1,4] diazepine-4,8- dione, 1,4,6,7- tetrahydro-1,4- dimethyl-7- (1,4,7,10,13- pentaaxapentade c-2-yl)		4.93	
	Formylanthraqui nnone	Cytotoxic effect on Breast Carcinoma	>1%	(A.M. Ali, 2000) [46]
15	Octadecenamid	Unrecognized signaling molecule octadecenamide induced physiological sleep	6.32	(Cravatt BF, 1995) [47]
17	di-n-octyl phthalate, di-iso-octyl phthalate	Multifunctional phthalate used in various product of cosmetics and personal care product in different concentration range	18.28	(Diane Koneiecki, 2011) [48]
		di-octyl phthalate enhanced the activity of sodium/iodide symporter (NIS) for endogenous mRNA expression		(Breous E, 2005) [49]
		Mostly come from PVC plastic packaging		(Zhiyong Guo, 2010) [50]

Table 2: Compound detail with respect to GCMS peaks

CLAIMS

I/WE claimed that

1. A process of making Processed Extract, as Breast Body Spray (BBS) comprising four sectional extractor(design diagram attached)
2. Processed Extract, as Breast Body Spray (BBS) further comprising: Free fatty acids (FFA's), anti-oxidants, hormonal regulators, cell signaling agent, anti-tumor agent, cytotoxic agent, and personal care product agents.
3. Free fatty acids (FFA's) as claimed in claim 2 further comprising molecular composition like hexadecanoic acid (palmitic acid) methyl ester and octadecanoic acid (stearic acid) methyl esters.
4. Anti-oxidants as claimed in claim 2 further comprising molecular composition like benzenepropanoic acid 3 5- bis(1 1-dimethylethyl)-4-hydroxy- methyl ester ; IONOL ; and 3,5-Di-t-butyl-4-meyhoxy-1,4-dihydro benzaldehyde.
5. Hormonal regulators as claimed in claim 2 further comprising molecular composition like 4,5,6-trimethyltetrahydroxy 1,3-oxazine-2-thione ; pyrrolidine-2- carboxylic acid amides, N-t-butylloxycarbonyl-N-[2-{1- pyrrolidyl}ethyl] ; (z) 7-hexadecenal.
6. Cell signaling agents as claimed in claim 2 further comprising molecular composition like Octadecenamid and 4-t-butyl-2-(1-methyl-2-nitroethyl) cyclohexanone.
7. Anti-tumor agents as claimed in claim 2 further comprising molecular composition like tetradecanoic acid.
8. Cytotoxic agents as claimed in claim 2 further comprising molecular composition like Formylanthraquinnone.
9. Personal care product agent as claimed in claim 2 further comprising molecular composition like di-n-octyl phthalate and di-iso-octyl phthalate.

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