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Linum usitatissimum as an antimicrobial agent and a potential natural healer: A reviewBy: [Fadzir, UA](#) (Fadzir, Ummu Afifah)^[1]; [Darnis, DS](#) (Darnis, Deny Susanti)^[2]; [Mustafa, BE](#) (Mustafa, Basma Ezzat)^[3]; [Mokhtar, KI](#) (Mokhtar, Khairani Idah)^[3]

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Abstract

Linum usitatissimum commonly known as flaxseed is one of the oldest crops traditionally cultivated mainly for its oil purposes. Flaxseed is widely known for its rich source of nutritive and bioactive compounds. Recently, it has gained considerable interest due to the potential health benefits attributed to its component of metabolites, including its antimicrobial properties. Two main components of flaxseed, the unsaturated fatty acids and lignan, are suggested as the main metabolites that exhibit antimicrobial activities. This paper aims to give an overview on fatty acid and phenolic compound in flaxseed and their possible activities as antimicrobial agents.

Keywords

Author Keywords: Alpha linolenic acid; antimicrobial; flaxseed; lignan; phenolic compound

KeyWords Plus: FLAXSEED OIL; ANTIBACTERIAL ACTIVITY; ANTIFUNGAL ACTIVITY; ACIDS; LIGNANS; SECOISOLARICRESINOL; ANTIOXIDANT; EXTRACTION; PRODUCTS; TARGET

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1. **Evaluation of antifungal activity of free fatty acids methyl esters fraction isolated from Algerian *Linum usitatissimum* L. seeds against toxigenic *Aspergillus*** Times Cited: 12
By: Abdelillah, Amrouche; Houcine, Benmehdi; Halima, Dalile; et al.
Asian Pacific Journal of Tropical Biomedicine Volume: 3 Issue: 6 Pages: 443-448 Published: JUN 2013
2. **Health effects with consumption of the flax lignan secoisolariciresinol diglucoside** Times Cited: 115
By: Adolphe, Jennifer L.; Whiting, Susan J.; Juurlink, Bernhard H. J.; et al.
BRITISH JOURNAL OF NUTRITION Volume: 103 Issue: 7 Pages: 929-938 Published: APR 14 2010
3. **Antibacterial activity of *Linum usitatissimum* L seeds and active compound detection** Times Cited: 3
By: Al-Bayati, F.A.
Rafidain Journal of Science Volume: 18 Pages: 27-36 Published: 2007
4. **Antibacterial and antibiofilm activity of flaxseed oil** Times Cited: 1
By: Al- Mathkhury, HJF; Al- Dhamin, AS; Al- Taie, KL.
Iraqi J Sci Volume: 57 Issue: 2B Pages: 1086 Published: 2016
5. **Metabolism and functional effects of plant-derived omega-3 fatty acids in humans** Times Cited: 44
By: Baker, Ella J.; Miles, Elizabeth A.; Burdge, Graham C.; et al.
PROGRESS IN LIPID RESEARCH Volume: 64 Pages: 30-56 Published: OCT 2016
6. **Antioxidant, antimicrobial and anti-HCV activities of lignan extracted from flaxseed** Times Cited: 8
By: Barbary, O. M.; El-Sohaimey, S. A.; El-Saadani, M. A.; et al.
J Agric Biol Sci Volume: 6 Pages: 247-256 Published: 2010
[\[Show additional data\]](#)
7. Title: [not available] Times Cited: 9
By: BERNACCHIA R
AUSTIN J NUTR FOOD S Volume: 2 Pages: 1045 Published: 2014
8. **POTENTIAL OF FLAXSEED AND FLAXSEED OIL IN BAKED GOODS AND OTHER PRODUCTS IN HUMAN-NUTRITION** Times Cited: 97
By: CARTER, JF
CEREAL FOODS WORLD Volume: 38 Issue: 10 Pages: 753-759 Published: OCT 1993
9. **Antiviral activity of lignans** Times Cited: 149
By: Charlton, JL
JOURNAL OF NATURAL PRODUCTS Volume: 61 Issue: 11 Pages: 1447-1451 Published: NOV 1998
10. **Characterization of *Linum usitatissimum* L. oil obtained from different extraction technique and in vitro antioxidant potential of supercritical fluid extract** Times Cited: 3
By: Chauhan, Rishika; Chester, Karishma; Khan, Yasmeen; et al.
JOURNAL OF PHARMACY AND BIOALLIED SCIENCES Volume: 7 Issue: 4 Pages: 284-288 Article Number: PMID 26681884 Published: OCT-DEC 2015
11. **Some physical properties of flaxseed (*Linum usitatissimum* L.)** Times Cited: 62
By: Coskuner, Yalcin; Karababa, Ersan
JOURNAL OF FOOD ENGINEERING Volume: 78 Issue: 3 Pages: 1067-1073 Published: FEB 2007
12. **Plant products as antimicrobial agents** Times Cited: 3,052
By: Cowan, MM
CLINICAL MICROBIOLOGY REVIEWS Volume: 12 Issue: 4 Pages: 564-+ Published: OCT 1999
13. **The biomedical potential of genetically modified flax seeds overexpressing the glucosyltransferase gene** Times Cited: 14
By: Czemplik, Magdalena; Kulma, Anna; Bazela, Karolina; et al.
BMC COMPLEMENTARY AND ALTERNATIVE MEDICINE Volume: 12 Article Number: 251 Published: DEC 10 2012
14. **Structure, composition, and variety development of flaxseed.** Times Cited: 61
By: Daun, J. K.; Barthet, V. J.; Chornick, T. L.; et al.
Flaxseed in human nutrition Issue: Ed.2 Pages: 1-40 Published: 2003
15. **Antibacterial activity of linoleic and oleic acids isolated from *Helichrysum pedunculatum*: a plant used during circumcision rites** Times Cited: 94
By: Dilika, F; Bremner, PD; Meyer, JJM
FITOTERAPIA Volume: 71 Issue: 4 Pages: 450-452 Published: AUG 2000
16. **Functional foods: a conceptual definition** Times Cited: 52
By: Doyon, Maurice; Labrecque, JoAnne
BRITISH FOOD JOURNAL Volume: 110 Issue: 10-11 Pages: 1133-1149 Published: 2008
17. **FUNCTION OF LIPOPHILIC ACIDS AS ANTIMICROBIAL FOOD ADDITIVES** Times Cited: 391
By: FREESE, E; SHEU, CW; GALLIERS, E
NATURE Volume: 241 Issue: 5388 Pages: 321-325 Published: 1973

18. **Flax and flaxseed oil: an ancient medicine & modern functional food** Times Cited: 86
By: Goyal, Ankit; Sharma, Vivek; Upadhyay, Neelam; et al.
JOURNAL OF FOOD SCIENCE AND TECHNOLOGY-MYSORE Volume: 51 Issue: 9 Pages: 1633-1653 Published: SEP 2014
19. **Production of Arabinoxylan-oligosaccharides from Flaxseed (*Linum usitatissimum*)** Times Cited: 23
By: Guilloux, Karine; Gaillard, Isabelle; Courtois, Josiane; et al.
JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY Volume: 57 Issue: 23 Pages: 11308-11313 Published: DEC 9 2009
20. **FLAXSEED AND FLAXSEED CAKE AS A SOURCE OF COMPOUNDS FOR FOOD INDUSTRY** Times Cited: 23
By: Gutierrez, C.; Rubilar, M.; Jara, C.; et al.
JOURNAL OF SOIL SCIENCE AND PLANT NUTRITION Volume: 10 Issue: 4 Pages: 454-463 Published: 2010
21. **Bioactive components of flaxseed and its health benefits** Times Cited: 7
By: Gutte, K.B.; Sahool, A.K.; Ranveer, R.C.
Int. J. Pharm. Sci. Rev. Res. Volume: 31 Issue: 1 Pages: 42-51 Published: 2015
22. **FLAXSEED** Times Cited: 87
By: Hall, Clifford, III; Tulbek, Mehmet C.; Xu, Yingying
ADVANCES IN FOOD AND NUTRITION RESEARCH, VOL 51 Book Series: Advances in Food and Nutrition Research Volume: 51 Pages: 1-97 Published: 2006
23. **Determination of phenolic and other polar compounds in flaxseed oil using liquid chromatography coupled with time-of-flight mass spectrometry** Times Cited: 19
By: Herchi, Wahid; Sawalha, Saleh; Arraez-Roman, David; et al.
FOOD CHEMISTRY Volume: 126 Issue: 1 Pages: 332-338 Published: MAY 1 2011
24. **NATURAL FLAVONOIDS AND LIGNANS ARE POTENT CYTOSTATIC AGENTS AGAINST HUMAN LEUKEMIC HL-60 CELLS** Times Cited: 225
By: HIRANO, T; GOTOH, M; OKA, K
LIFE SCIENCES Volume: 55 Issue: 13 Pages: 1061-1069 Published: 1994
25. **Linum usitatissimum (linseed/flaxseed) fixed oil: antimicrobial activity and efficacy in bovine mastitis** Times Cited: 29
By: Kaithwas, Gaurav; Mukerjee, Alok; Kumar, P.; et al.
Inflammopharmacology Volume: 19 Issue: 1 Pages: 45-52 Published: FEB 2011
26. **Effect of L. usitatissimum (Flaxseed/Linseed) Fixed Oil against Distinct Phases of Inflammation.** Times Cited: 5
By: Kaithwas, Gaurav; Majumdar, Dipak K
ISRN inflammation Volume: 2013 Pages: 735158 Published: 2013
27. **Flaxseed phenolics as natural antioxidants.** Times Cited: 27
By: Kasote, D. M.
International Food Research Journal Volume: 20 Issue: 1 Pages: 27-34 Published: 2013
28. **Topoisomerase as target for antibacterial and anticancer drug discovery** Times Cited: 25
By: Kathiravan, Muthu K.; Khilare, Madhavi M.; Nikoomanesh, Kiana; et al.
JOURNAL OF ENZYME INHIBITION AND MEDICINAL CHEMISTRY Volume: 28 Issue: 3 Pages: 419-435 Published: JUN 2013
29. **Lignans in Flaxseed** Times Cited: 6
By: Krajcova, A.; Schulzova, V.; Hajslova, J.; et al.
CZECH JOURNAL OF FOOD SCIENCES Volume: 27 Special Issue: SI Pages: S252-S255 Published: 2009
30. **Lignan contents of Dutch plant foods: a database including lariciresinol, pinoresinol, secoisolariciresinol and matairesinol** Times Cited: 241
By: Milder, IEJ; Arts, ICW; van de Putte, B; et al.
BRITISH JOURNAL OF NUTRITION Volume: 93 Issue: 3 Pages: 393-402 Published: MAR 2005

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