

9 July 2013
EMA/HMPC/198792/2012
Committee on Herbal Medicinal Products (HMPC)

List of references supporting the assessment of *Arnica montana L., flos*

Draft

The European Medicines Agency acknowledges that copies of the underlying works used to produce this monograph were provided for research only with exclusion of any commercial purpose.

Alfredo PP et al., Effects of phonophoresis with Arnica Montana onto acute inflammatory process in rat skeletal muscles: An experimental study, Ultrasonics, 2008, 49, 466-471

Alonso D et al., Effects of topical Arnica Gel on Post-Laser Treatment Bruises, Dermatol Surg, 2002, 28, 686-688

Berges et al., Helenalin suppresses essential immune functions of activated CD4 cells by multiple mechanisms, Elsevier, 2009, doi:10.1016

Bergonzi et al., Evaluation of skin permeability of sesquiterpenes of an innovative supercritical carbon dioxide arnica extract by HPLC/DAD/MS; Pharmazie, 2005, 60, 36-38

Brock FE, Arnica Montana bei Venenleiden, Zeitschrift für Phytotherapie, 1991, 12, 141-145

Brock FE, Additiver Effekt venentypischer Hydrotherapie nach Kneipp und lokaler Arnika-Anwendungen bei patienten mitvenöser Insuffizienz-Synergismus naturheilkundlicher Therapien, Fachklinik für Rehabilitation und Gefäßerkrankungen, Kneippianum

Chetak J, CGP Case Report: Drug Interaction Between Warfarin and Arnica, Pharmacy Practise News, 2011, 37

Ciganda C, Laborde A, Herbal Infusions Used for Induced Abortion, Journal of toxicology Clinical Toxicology, 2003, 41, No 3, 235-239

CIR Expert Panel (2001) Final report on the safety assessment of Arnica montana extract and Arnica montana. Int J Toxicol 20 (Suppl 2):1-11

Corazza M. et al., Use of topical herbal remedies and cosmetics: a questionnaire-based investigation in dermatology out patients, Journal compilation European Academy of Dermatology and Venerology, 2009, 10.1111, 1468-3083



Delmonte S et al., Leukemia. Related Sweet's Syndrome Elicited by Pathergy to Arnica, Dermatology, 1998, 197, 195-196

Eberhartinger C, Beobachtungen zur Häufigkeit von Kontaktallergien, Z Hautkr, 1984, 59 (19) 1283-1289

Ekenäs C et al., Screening for Anti-Inflammatory Activity of 12 Arnica (Asteraceae) species assessed by Inhibition of NF- κ B and Release of Human Neutrophil Elastase , Planta med, 2008, 74, 1789-1794

Francois G, Claus M, Pseudoguaianolide Sesquiterpene Lactones with High Activities against the Human malaria Parasite Plasmodium falciparum, Phytotherapy Research, 2004, 18, 184-186

Ganzena M et al., Quantitative analysis of flavonoids and phenolic acids in Arnica montana L. by micellar electronic capillary chromatography, Analytica chimica, 2008, 614, 196-200

Göggelmann, Schimmer, Mutagenic activity of phytotherapeutic drugs. Prog Clin Biol Res, 1986, 206, 63-72

Hausen BM, Kokardenblumen-Allergie, Dermatosen 33, 1985, 2, 62-68

Hausen BM, The sensitizing capacity of compositae plants, Contact Dermatitis, 1978, 4, 3-10

Hausen BM, Arnikaallergie, Der Hautarzt, 1980, 31, 10-17

Hermann H-D, Willuhn G, Hausen BM, Helenalinmethacrylate, a new Pseudoguaianolide from the Flowers of Arnica Montana L. and the sensitizing Capacity of their Sesquiterpene Lactones, Planta med, 1978, 34, 299-304

Iauk et al., Antibacterial Activity of medical Plant Extracts Against Peridontopathic Bacteria, Phytotherapy Research, 2003, 17, 599-604

Jäger C et al., Phytomedicines Prepared from Arnica Flowers Inhibit the Transcription Factors AP-1 and NF- κ B and Modulate the Activity of MMO1 and MMP13 in Human and Bovine Chondrocytes, Planta med, 2009, 10-1055

Jocher et al., Allergic potential of Arnica-containing formulations in Arnica-allergic patients, Contact Dermatitis, 2009, 61, 304-306

Klaas et al., Studies on the Anti-Inflammatory of Phytopharmaceuticals prepared from Arnica Flowers, Planta med, 2002, 68, 385-391

Knuesel O, Weber Michel Dr. Sc.Nat., Suter Andy M.Sc., Arnica Montana Gel in Osteoarthritis of the Knee: An Open, Multicenter Clinical Trial, Advances in Therapy, 2002, 19 (5), 209-218

Kolodziej H, Sesquiterpenlactone Biologische Aktivität, Deutsche Apothekerzeitung, 1993, 133 20, 1795-1805

Kos et al., New sesquiterpene Lactones from Arnica Tincture prepared from Fresh Flowerheads of Arnica Montana, Planta med, 2005, 71, 1044-1052

Lass et al., Anti-inflammatory and immune-regulatory mechanisms prevent contact hypersensitivity in Arnica Montana L., Experimental dermatology, 2008, 17, 849-857

Leu et al., Accelerated resolution of laser-induced bruising with topical 20% arnica: a rater-blinded randomized controlled trial, British Journal of Dermatology, 2002, 163, 557-563

Lyss et al., Helenalin, an Anti-Inflammatory Sesquiterpene Lactone from Arnica, Selectively Inhibits Transcription factor NF- κ B, Biol. Chem. 1997, 378, 951-961

Machet L et al., Allergic contact dermatitis from sunflower (*Helianthus annuus*) with cross-sensitivity to arnica, Contact D, 1993, 28, 184-200

Marcinek, Hüpen, Bestendonk, Christoph et al., Germacranolide, Guaianolide and Xanthanolide from the Flowers of Arnica mollis and an X-Ray structure Analysis of Baileyin Acetate, Planta med, 1990, 56, 104-109

Merfort et al., Flavonoid Glucoronides from Flowers of Arnica Montana, Kurzvortrag Arzneipflanzenforschung, Leiden, Niederlande, 1987

Merfort et al., Methylated Flavonoids from Arnica Montana and arnica chamissonis, Kurzvortrag Pharmazeutische Wissenschaften, München, 1983

Merfort et al., Flavonoides from Arnica Montana and Arnica chamissonis, Kurzvortrag Arzneipflanzenforschung, Antwerpen, 1984

Merfort et al., New Flavonoid Glycosides from Arnica flos DAB 9 , Kurzvortrag Gesellschaft für Arzneipflanzenforschung Freiburg 1988, Braunschweig 1989

Paßreiter et al., Tussilagine and Isotussilagine: Two Pyrrolizidine Alkaloids in the Genus arnica, 9th congress of Medical plant research, Saarbrücken, 1991

Paßreiter CM, Co-Occurrence of 2-Pyrrolidineacetic acid with the Pyrrolizidines Tussilaginic Acid and Issotussilaginic Acid and their 1-Epimers in Arnica species and Tussilago Farfara, Phytochemistry, 1992, 31 (12), 4135-4137

Paulsen E et al., Cosmetics and herbal remedies with Compositae plant extracts- are they tolerated by Compositae-allergic patients?, Contact dermatitis, 2008, 58, 15-23

Paulsen E, Contact sensitization from Compositae-containing herbal remedies and cosmetics, Contact Dermatitis, 2002, 47, 189-198

Pirker C, et al., Cross-reactivity with Tagetes in Arnica contact eczema, Contact Dermatitis, 1992, 26, 217-219

Reider N et al., The seamy side of natural medicines: contact sensitization to arnica (Arnica Montana L.) and marigold (*Calendula officinalis* L.) Contact dermatitis, 2001, 45, 269-272

Ross SM, Osteoarthritis A Proprietary Arnica Gel Is Found to Be as Effective as Ibuprofen Gel in Osteoarthritis of the Hands, Holist Nurs Pract, 2008, 22 (4), 237-239

Saluk-Juszak et al., The effects of polyphenolic-polysaccharide conjugates from selected medical plants of asteraceaefamily on the peroxynitrite-induced changes in blood platelet proteins, Elsevier B.V., 2010, doi:10.1016

Schempp CM, Schöpf E, Simon JC, Durch Pflanzen ausgelöste toxische und allergische Dermatitis (Phytodermatitis), Hautarzt, 2002, 53, 93-97

Schmidt et al., Anti-trypanosomal Activity of helenalin and Some Structurally teleated sesquiterpene Lactones, Institut für Pharmazeutische Biologie, Düsseldorf, Planta med, 2002, 68, 750-751

Schröder et al., Helenalin and 11alpha, 13 Dihydrohelenalin, Two constituents from Arnica Montana L. inhibit Human platelet Function Via Thiol-dependennt pathways, Institut für Pharmazeutische Biologie Düsseldorf, 1990

Spettoli E et al., Contact Dermatitis Caused by Sesquiterpene Lactones, Contact Dermatitis, 1998, 9 (1), 49-50

Staniciuc et al., In vitro Antimicrobial activity of Romanian medical Plants Hydroalcoholic Extracts on Planktonic and Adhered cells, nationan Institute for biological Scienes, Bucharest, Romania

Tekko IA et al., Permeation of bioactive constituents from Arnica Montana preparations through human skin in-vitro, Journal of Pharmacy and Pharmacology, 2006, 58, 1167-1176

Totonchi A, Guyuron B, A Randomized, controlled Comparison between Arnica and Seroids in the Management of Postrhinoplasty Ecchymosis and Edema, PRSLournal, 2007, 10.1097, 271-274

Verma et al., Evaluation of inhibitory activities of plant extracts on production of LPS-stimulated pro-inflammatory mediators in J774 murine macrophages, Mol cell Biochem, 2010, 336, 127-135

Wagner et al., In vitro behaviour of Sesquiterpene Lactones and Sesquiterpene lactone-containing Plant Preparations in human Billd, Olasma and Human serum Albumin Solutions, Planta med, 2004, 70, 227-233

Wagner et al., Skin penetration Studies of Arnica Prearations and of their Sesquiterpene Lactones, Planta med, 2004, 70, 897-903

Widrig R, Suter A, Saller R, Melzer J, Choosing between NSAID and arnica for topical treatment of hand osteoarthritis in a randomised, double-blind study, Rheumatol Int, 2007, 27, 585-591

Willuhn G, Arnika-Kontakdermatitis und die sie verursachenden Kontaktallergene, Deutsche Apothekerzeitung, 1986, 38, 2038-2044

Willuhn G, Sesquiterpenlactone, potentielle Leitsubstanzen für die Arzneistofffindung Struktur und biologisch-pharmakologische Aktivitäten, Deutsche Apothekerzeitung, 1987, 48, 2511-2517

Willuhn et al., 6-O-Isobutyryl-tetrahydrohelenalin aus Blüten von Arnica montana, Kurzvortrag Deutsche Pharmazeutische Gesellschaft, Freiburg, Pharm. Ztg, 1981, 126, 2017

Willuhn et al., Helenalin- und 11,13 Dihydrohelenalinester aus Blüten von Arnica montana, Kurzvortrag Deutsche Pharmazeutische Gesellschaft, Regensburg, Pharm Ztg, 1980, 125, 1803

Woerdenbag et al., Cytotoxicity of Flavonoids and sesquiterpene lactones from Arnica Species against the GLC4 and the COLO 320 cell lines, Planta med, 1994, 60, 434-437