

Patrik Eklund CV

Patrik Christoffer Eklund

Laboratory of Molecular Science and Engineering

Solutions for Health

Technologies for a Sustainable Future

Email: patrik.c eklund@abo.fi

Mobile: +358-469219059

Employment

Professor

Laboratory of Molecular Science and Engineering

Åbo Akademi University

1 May 2023 → 31 Jul 2026

Solutions for Health

Åbo Akademi University

1 Jan 2016 → present

Technologies for a Sustainable Future

Åbo Akademi University

1 Jan 2016 → present

Publications

Insights Into Molecular Interactions and Biological Effect of Natural Stilbenoids at The TRPA1 Ion Channel

Saadabadi, A., Rantanen, M., Marimuthu, P., Koivisto, A.-P., Eklund, P. C. & Salo-Ahen, O. M. H., 1 Feb 2025, In: ChemMedChem. 20, 3, e202400501.

Isolation of stilbenoids from fresh knotwood of Scots pine using a high yield method

Saadabadi, A., Korotkova, E. & Eklund, P. C., 1 Jul 2024, In: Holzforschung. 78, 7, p. 363-370

Evolution of Self-Assembled Lignin Nanostructure into Dendritic Fiber in Aqueous Biphasic Photocurable Resin for DLP-Printing

Wang, L., Wu, R., Wang, Q., Backman, O., Eklund, P. C., Wang, X. & Xu, C., 21 Mar 2024, In: Advanced Functional Materials. 34, 29, 2315679.

Investigating the Effectiveness of Different Porous Nanoparticles as Drug Carriers for Retaining the Photostability of Pinosylin Derivative

Howaili, F., Saadabadi, A., Mäkilä, E., Korotkova, E., Eklund, P. C., Salo-Ahen, O. M. H. & Rosenholm, J. M., 15 Feb 2024, In: Pharmaceutics. 16, 2, 17 p., 276.

Stilbenoid compounds inhibit NF- κ B-mediated inflammatory responses in the Drosophila intestine

Aalto, A. L., Saadabadi, A., Lindholm, F., Kietz, C., Himmelroos, E., Marimuthu, P., Salo-Ahen, O. M. H., Eklund, P. & Meinander, A., 22 Sept 2023, In: Frontiers in Immunology. 14, 12 p., 1253805.

Template-Directed Polymerization of Binary Acrylate Monomers on Surface-Activated Lignin Nanoparticles in Toughening of Bio-Latex Films

Wang, L., Wang, Q., Rosqvist, E., Smått, J.-H., Yong, Q., Lassila, L., Peltonen, J., Rosenau, T., Toivakka, M., Willför, S., Eklund, P. C., Xu, C. & Wang, X., 14 Jun 2023, In: Small. 19, 24, 15 p., 2207085.

Consistent trajectories of rhinitis control and treatment in 16,177 weeks: The MASK-air® longitudinal study

Sousa-Pinto, B., Schünemann, H. J., Sá-Sousa, A., Vieira, R. J., Amaral, R., Anto, J. M., Klimek, L., Czarlewski, W., Mullol, J., Pfaar, O., Bedbrook, A., Brussino, L., Kvedariene, V., Larenas-Linnemann, D. E., Okamoto, Y., Ventura, M. T., Agache, I., Ansotegui, I. J., Bergmann, K. C. & Bosnic-Anticevich, S. & 54 others, Canonica, G. W., Cardona, V., Carreiro-

Martins, P., Casale, T., Cecchi, L., Chivato, T., Chu, D. K., Cingi, C., Costa, E. M., Cruz, A. A., Del Giacco, S., Devillier, P., Eklund, P., Fokkens, W. J., Gemicioglu, B., Haahtela, T., Ivancevich, J. C., Ispayeva, Z., Jutel, M., Kuna, P., Kaidashev, I., Khaitov, M., Kraxner, H., Laune, D., Lipworth, B., Louis, R., Makris, M., Monti, R., Morais-Almeida, M., Mösges, R., Niedoszytko, M., Papadopoulos, N. G., Patella, V., Pham-Thi, N., Regateiro, F. S., Reitsma, S., Rouadi, P. W., Samolinski, B., Sheikh, A., Sova, M., Todo-Bom, A., Taborda-Barata, L., Toppila-Salmi, S., Sastre, J., Tsiligianni, I., Valiulis, A., Vandenplas, O., Wallace, D., Wasserman, S., Yorgancioglu, A., Zidarn, M., Zuberbier, T., Fonseca, J. A. & Bousquet, J., Apr 2023, In: *Allergy*. 78, 4, p. 968-983 16 p.

Transformations and antioxidative activities of lignans and stilbenes at high temperatures

Runeberg, P., Ryabukhin, D., Lagerquist, L., Rahkila, J. & Eklund, P., 15 Mar 2023, In: *Food Chemistry*. 404, part B, 134641.

Insect repellent composition and a method of repelling insects

Eriksson, J. (Inventor), Paul, P. (Inventor), Rajendran, S. (Inventor) & Eklund, P. C. (Inventor), 24 Nov 2022, Priority date 21 May 2021

O₂ as initiator of autocatalytic degradation of hemicelluloses and monosaccharides in hydrothermal treatment of spruce

Rissanen, J. V., Lagerquist, L., Eränen, K., Hemming, J., Eklund, P. & Grénman, H., 1 Oct 2022, In: *Carbohydrate Polymers*. 293, 119740.

Intensification of Hydrothermal Biomass Fractionation with the Help of Oxygen: Kinetics and Modeling

Rissanen, J. V., Lagerquist, L., Hemming, J., Eränen, K., Eklund, P. & Grénman, H., 26 Sept 2022, In: *ACS Sustainable Chemistry and Engineering*. 10, 38, p. 12808-12816 9 p.

Reductive Catalytic Depolymerization of Semi-industrial Wood-Based Lignin

Lu, X., Lagerquist, L., Eränen, K., Hemming, J., Eklund, P., Estel, L., Leveneur, S. & Grénman, H., 1 Dec 2021, In: *Industrial and Engineering Chemistry Research*. 60, 47, p. 16827–16838

High recovery of stilbene glucosides by acetone extraction of fresh inner bark of Norway spruce

Saadabadi, A., Ahmed, A., Smeds, A. I. & Eklund, P. C., 1 Nov 2021, In: *Holzforschung*. 75, 11, p. 1012-1018 7 p.

Wood Extractives of Silver Fir and Their Antioxidant and Antifungal Properties

Vek, V., Kerzic, E., Poljansek, I., Eklund, P., Humar, M. & Oven, P., Nov 2021, In: *Molecules*. 26, 21

Identification and Quantification of Transformation Products Formed during the Ozonation of the Non-steroidal Anti-inflammatory Pharmaceuticals Ibuprofen and Diclofenac

Kråkström, M., Saeid, S., Tolvanen, P., Kumar, N., Salmi, T., Kronberg, L. & Eklund, P. C., 21 Mar 2021, (E-pub ahead of print) In: *Ozone: Science and Engineering*.

Determination of chemical shifts in 6-condensed syringylic lignin model compounds

Lagerquist, L., Rahkila, J. & Eklund, P., 2021, In: *Holzforschung*.

Fate of antioxidative compounds within bark during storage: A case of Norway spruce logs

Jyske, T., Brännström, H., Sarjala, T., Hellström, J., Halmemies, E., Raitanen, J. E., Kaseva, J., Lagerquist, L., Eklund, P. & Nurmi, J., 15 Sept 2020, In: *Molecules*. 25, 18, 21 p., 4228.

Occurrence of Antibiotics in Influent and Effluent from 3 Major Wastewater-Treatment Plants in Finland

Kortemäki, E., R Östman, J., Meierjohann, A., Brozinski, J.-M., Eklund, P. C. & Kronberg, L., Sept 2020, In: *Environmental Toxicology and Chemistry*. 39, 9, p. 1774–1789

One-pot propargylation and Claisen-type rearrangement for natural lignans matairesinol and α -conidendrin

Riabukhin, D., Lagerquist, L., Rahkila, J. & Eklund, P. C., 22 Aug 2020, In: *Chemistry of Heterocyclic Compounds*. 56, 7, p. 949-952 4 p.

Tailored thermosetting wood adhesive based on well-defined hardwood lignin fractions

Wang, L., Lagerquist, L., Zhang, Y., Koppolu, R., Tirri, T., Sulaeva, I., von Schoultz, S., Vähäsalo, L., Pranovich, A., Rosenau, T., Eklund, P. C., Willför, S., Xu, C. & Wang, X., 11 Aug 2020, In: ACS Sustainable Chemistry and Engineering. 8, 35, p. 13517–13526

Synthesis and characterization of metal modified catalysts for decomposition of ibuprofen from aqueous solutions

Saeid, S., Kråkström, M., Tolvanen, P., Kumar, N., Eränen, K., Peurla, M., Mikkola, J. P., Maël, L., Kronberg, L., Eklund, P. & Salmi, T., 14 Jul 2020, In: Catalysts. 10, 7, 786.

Catalytic ozonation of the antibiotic sulfadiazine: reaction kinetics and transformation mechanisms

Kråkström, M., Saeid, S., Tolvanen, P., Salmi, T., Eklund, P. C. & Kronberg, L., May 2020, In: Chemosphere. 247, p. – 125853.

Ozonation of carbamazepine and its main transformation products: Product determination and reaction mechanisms

Kråkström, M., Saeid, S., Tolvanen, P., Kumar, N., Salmi, T., Kronberg, L. & Eklund, P., 25 Apr 2020, In: Environmental Science and Pollution Research. 27, 18, p. 23258-23269 12 p.

Formation of Tetrahydrofurano-, Aryltetralin, and Butyrolactone Norlignans through the Epoxidation of 9-Norlignans

Runeberg, P., Agustin, D. & Eklund, P. C., 5 Mar 2020, In: Molecules. 25, 5, p. – 1160.

Enhancement of Norway spruce bark side-streams: Modification of bioactive and protective properties of stilbenoid-rich extracts by UVA-irradiation

Välilmaa, A. L., Raitanen, J. E., Tienaho, J., Sarjala, T., Nakayama, E., Korpinen, R., Mäkinen, S., Eklund, P., Willför, S. & Jyske, T., Mar 2020, In: Industrial Crops and Products. 145, 112150.

Pt Modified Heterogeneous Catalysts Combined with Ozonation for the Removal of Diclofenac from Aqueous Solutions and the Fate of by-Products

Saeid, S., Kråkström, M., Tolvanen, P., Kumar, N., Eränen, K., Mikkola, J. P., Kronberg, L., Eklund, P., Aho, A., Palonen, H., Perula, M., Shchukarev, A. & Salmi, T., Mar 2020, In: Catalysts. 10, 3, 322.

Advanced Oxidation Process for Degradation of Carbamazepine from Aqueous Solution: Influence of Metal Modified Microporous, Mesoporous Catalysts on the Ozonation Process

Saeid, S., Kråkström, M., Tolvanen, P., Kumar, N., Eränen, K., Mikkola, J.-P., Kronberg, L., Eklund, P. C., Peurla, M., Aho, A., Shchukarev, A. & Salmi, T., 2020, In: Catalysts. 10, 1, p. –

9-Norlignans: Occurrence, Properties and Their Semisynthetic Preparation from Hydroxymatairesinol

Eklund, P. C. & Raitanen, J.-E., 2019, In: Molecules. 24, 2, p. – 12 p.

Chemical characterisation of polymerised extractives in bleached birch kraft pulp

Smeds, A., Vähäsalo, L., Rahkila, J., Eklund, P. C. & Willför, S., 2019, In: Holzforschung. 73, 11, p. 1017–1033 17 p.

Oxidative transformations of lignans

Runeberg, P., Brusentsev, Y., Rendon, S. & Eklund, P. C., 2019, In: Molecules. 24, 2, p. –

Structural and thermal analysis of softwood lignins from a pressurized hot water extraction biorefinery process and modified derivatives

Lagerquist, L., Pranovich, A., Sumerskii, I., von Schoultz, S., Vähäsalo, L., Willför, S. & Eklund, P. C., 2019, In: Molecules. 24, 2, p. – 15 p.

Synthesis and Evaluation of Anisomelic acid-like Compounds for the Treatment of HPV-Mediated Carcinomas

Senthikumar, R., Brusentsev, Y., Paul, P., Marimuthu, P., Cheng, F., Eklund, P. C. & Eriksson, J., 2019, In: Scientific Reports. 9, p. – 20295.

Tsuji–Wacker-Type Oxidation beyond Methyl Ketones: Reacting Unprotected Carbohydrate-Based Terminal Olefins through the “Uemura System” to Hemiketals and α,β -Unsaturated Diketones

Runeberg, P. & Eklund, P. C., 2019, In: *Organic Letters*. 21, 20, p. 8145–8148

Utilization of P-31 PULCON for Quantitative Hydroxyl Group Determination in Lignin by NMR Spectroscopy

Lagerquist, L., Rahkila, J. & Eklund, P. C., 2019, In: *ACS Sustainable Chemistry and Engineering*. 7, 9, p. 9002–9006 9 p.

Abatement of amoxicillin and doxycycline in binary and ternary aqueous solutions by gas-phase pulsed corona discharge oxidation

Sokolov, A., Kråkström, M., Eklund, P. C., Kronberg, L. & Louhi-Kultanen, M., 2018, In: *Chemical Engineering Journal*. 334, p. 673–681

Characterization of high-molar-mass fractions in a Scots pine (*Pinus sylvestris* L.) knotwood ethanol extract

Smeds, A., Eklund, P. C. & Willför, S., 2018, In: *Holzforschung*. 72, 3, p. 201–213 13 p.

Handheld colorimeter as quality control tool for inkjet printed flexible levothyroxine doses for pediatric use

Wickström, H., Broos, A., Nyman, J., Kortesmäki, E., Eklund, P. C., de Beer, T., Preis, M., Sandler, N., Salunke, S. (Editor) & Tuleu, C. (Editor), 2018, In: *International Journal of Pharmaceutics*. 536, 2, p. 508–509

Non-thermal gas-phase pulsed corona discharge for lignin modification

Sokolov, A., Lagerquist, L., Eklund, P. C. & Louhi-Kultanen, M., 2018, In: *Chemical Engineering and Processing*. 126, p. 141–149 9 p.

Structural analysis of lignin isolated from a novel biorefinery process and identification of condensed structures using 2D NMR

Lagerquist, L., Eklund, P. C., Eichhorn, S. J. (Editor) & Roman, M. (Editor), 2018

Structural characterization of birch lignin isolated from a pressurized hot water extraction and mild alkali pulped biorefinery process

Lagerquist, L., Pranovich, A., Smeds, A., von Schoultz, S., Vähäsalo, L., Rahkila, J., Kilpeläinen, I., Tamminen, T., Willför, S. & Eklund, P. C., 2018, In: *Industrial Crops and Products*. 111, p. 306–316 11 p.

Compounds for use for treatment of HPV-induced carcinoma

Eriksson, J. (Inventor), Paul, P. (Inventor), Rajendran, S. (Inventor), Eklund, P. C. (Inventor), Cheng, F. (Inventor) & Brusentsev, Y. (Inventor), 2017, Patent No. 3179998 (europa), Priority date 17 Aug 2015

Chemical characterization of high-molar-mass fractions in a Norway spruce knotwood ethanol extract

Smeds, A., Eklund, P. C. & Willför, S., 2016, In: *Phytochemistry*. 130, p. 207–217

Synthesis of chiral phosphorous and phosphoric acid derivatives from the lignans matairesinol and conidendrin

Brusentsev, Y. & Eklund, P. C., 2016, In: *Synlett*. 27, 18, p. 2557–2560

Transforming undergraduate students into junior researchers: oxidation–reduction sequence as a problem-based case study

Saloranta-Simell, T., Lönnqvist, J.-E. & Eklund, P. C., 2016, In: *Journal of Chemical Education*. 93, 5, p. 841–846 6 p.

Composite films of nanofibrillated cellulose and O-acetyl galactoglucomannan (GGM) coated with succinic esters of GGM showing potential as barrier material in food packaging

Kisonen, V., Prakobna, K., Xu, C., Salminen, A., Mikkonen, K. S., Valtakari, D., Eklund, P. C., Seppälä, J., Tenkanen, M. & Willför, S., 2015, In: *Journal of Materials Science*. 50, 8, p. 3189–3199 11 p.

Synthesis and applications of diphosphine ligands derived from the lignan hydroxymatairesinol

Brusentsev, Y. & Eklund, P. C., 2015, In: *Catalysis Today*. 241 Part B, p. 260–263

The effect of density functional dispersion correction (DFT-D3) on lignans

Sandberg, T. & Eklund, P. C., 2015, In: *Computational and Theoretical Chemistry*. 1067, p. 60–63 4 p.

Cationised O-acetyl galactoglucomannans: synthesis and characterisation

Kisonen, V., Xu, C., Eklund, P. C., Lindqvist, H., Sundberg, A., Pranovich, A., Sinkkonen, J., Vilaplana, F. & Willför, S., 2014, In: Carbohydrate Polymers. 99, p. 755–764

O-acetyl galactoglucomannan esters for barrier coatings

Kisonen, V., Xu, C., Bollström, R., Hartman, J., Rautkoski, H., Nurmi, M., Hemming, J., Eklund, P. C. & Willför, S., 2014, In: Cellulose. 21, 6, p. 4497–4509 13 p.

Rational evaluation of the utilization of PEG-PEI copolymers for the facilitation of silica nanoparticulate systems in biomedical applications.

Sen Karaman, D., Gulin-Sarfraz, T., Hedström, G., Duchanoy, A., Eklund, P. C. & Rosenholm, J., 2014, In: Journal of Colloid and Interface Science. 418, p. 300–310

Targeted allylation and propargylation of galactose-containing polysaccharides in water

Leppänen, A.-S., Xu, C., Parikka, K., Eklund, P. C., Sjöholm, R., Brumer, H., Tenkanen, M. & Willför, S., 2014, In: Carbohydrate Polymers. 100, p. 46–54

Amphiphilic Spruce Galactoglucomannan Derivatives Based on Naturally-Occurring Fatty Acids

Dax, D., Eklund, P. C., Hemming, J., Sarfraz, J., Backman, P., Xu, C. & Willför, S., 2013, In: BioResources. 8, 3, p. 3771–3790 20 p.

Computational Chemistry Studies of LIGNOLS

Sandberg, T., Eklund, P. C. & Hotokka, M., 2013, In: Lecture Notes in Computer Science. 7782, p. 553–557 5 p.

Corrigendum to "The antimicrobial effects of wood-associated polyphenols on food pathogens and spoilage organisms." [Int. J. Food Microbiol. 164 (2013) 99-107]

Plumed-Ferrer, C., Väkeväinen, K., Komulainen, H., Rautiainen, M., Smeds, A., Raitanen, J.-E., Eklund, P., Willför, S., Alakomi, H.-L., Saarela, M. & von Wright, A., 2013, In: International Journal of Food Microbiology.

Evaluation of selective extraction methods for recovery of polyphenols from pine

Fang, W., Hemming, J., Reunanen, M., Eklund, P. C., Conde Pineiro, E., Poljanšek, I., Oven, P. & Willför, S., 2013, In: Holzforschung. 67, 8, p. 843–851 9 p.

Synthesis and structural analysis of sterically hindered chiral 1,4-diol ligands derived from the lignan hydroxymatairesinol

Brusentsev, Y., Sandberg, T., Hotokka, M., Sjöholm, R. & Eklund, P. C., 2013, In: Tetrahedron Letters. 54, 9, p. 1112–1115 4 p.

Synthesis of sterically hindered chiral 1,4-diols from different lignan-based backbones

Brusentsev, Y., Hänninen, M. M. & Eklund, P. C., 2013, In: Synlett. 24, 18, p. 2423–2426

Targeted Functionalization of Spruce O-Acetyl Galactoglucomannans-2,2,6,6-Tetramethylpiperidin-1-oxyl-oxidation and Carbodiimide-Mediated Amidation

Leppänen, A.-S., Xu, C., Eklund, P., Lucenius, J., Österberg, M. & Willför, S., 2013, In: Journal of Applied Polymer Science. 130, 5, p. 3122–3129 8 p.

The antimicrobial effects of wood-associated polyphenols on food pathogens and spoilage organisms.

Plumed-Ferrer, C., Väkeväinen, K., Komulainen, H., Rautiainen, M., Smeds, A., Raitanen, J.-E., Eklund, P. C., Willför, S., Alakomi, H.-L., Saarela, M. & von Wright, A., 2013, In: International Journal of Food Microbiology. 164, 1, p. 99–107

"The antimicrobial effects of wood-associated polyphenols on food pathogens and spoilage organisms." [Int. J. Food Microbiol. 164 (2013) 99-107]

Plumed-Ferrer, C., Väkeväinen, K., Komulainen, H., Rautiainen, M., Smeds, A., Raitanen, J.-E., Eklund, P. C., Willför, S., Alakomi, H.-L., Saarela, M. & von Wright, A., 2013, In: International Journal of Food Microbiology. 166, 1, p. 163–163 1 p.

The antitumor lignan Nortrachelogenin sensitizes prostate cancer cells to TRAIL-induced cell death by inhibition of the Akt pathway and growth factor signaling.

Peuhu, E., Paul, Preethy, P., Holmbom, Eklund, P. C., Sjöholm, R. & Eriksson, J., 2013, In: *Biochemical Pharmacology*. 86, 5, p. 571–583

Chemical characterization of polymerized products formed in the reactions of matairesinol and pinoresinol with the stable radical 2,2-diphenyl-1-picrylhydrazyl

Smeds, A. I., Eklund, P. C., Monogioudi, E. & Willför, S. M., Mar 2012, In: *Holzforschung*. 66, 3, p. 283-294

Antithrombotic properties of sulfated wood-derived galactoglucomannans

Doliska, A., Willför, S., Strnad, S., Ribitsch, V., Stana Kleinschek, K., Eklund, P. C. & Chunlin, X., 2012, In: *Holzforschung*. 66, 2, p. 149–154 6 p.

Conformational Solvation Studies of LIGNOLs with Molecular Dynamics and Conductor-Like Screening Model

Sandberg, T., Eklund, P. C. & Hotokka, M., 2012, In: *International Journal of Molecular Sciences*. 13, 8, p. 9845–9863 19 p.

Content, composition, and stereochemical characterisation of lignans in berries and seeds

Smeds, A., Eklund, P. C. & Willför, S., 2012, In: *Food Chemistry*. 134, 4, p. 1991–1998 8 p.

Hydrophobication and characterisation of O-acetyl-galactoglucomannan for papermaking and barrier applications

Kisonen, V., Eklund, P. C., Auer, M., Sjöholm, R., Pranovich, A., Hemming, J., Sundberg, A., Aseyev, V. & Willför, S., 2012, In: *Carbohydrate Research*. 352, p. 151–158

Identification of new lignans in Norway spruce knotwood extracts

Smeds, A., Cesková, I., Eklund, P. C. & Willför, S., 2012, In: *Holzforschung*. 66, 5, p. 553–567 15 p.

Studies Related to Norway Spruce Galactoglucomannans: Chemical Synthesis, Conformation Analysis, NMR Spectroscopic Characterization, and Molecular Recognition of Model Compounds

Ekholm, F. S., Ardá, A., Eklund, P. C., André, S., Gabius, H.-J., Jiménez-Barbero, J. & Leino, R., 2012, In: *Chemistry - A European Journal*. 18, 45, p. 14392–14405 14 p.

Syntheses and applications of chirally pure phosphine ligands from the natural lignan hydroxymatairesinol

Brusentsev, Y. & Eklund, P. C., 2012, In: *Abstracts of Papers of the American Chemical Society*. 243, p. – 1 p.

Targeted modification of galactose-containing polysaccharides

Leppänen, A.-S., Xu, C., Parikka, K., Eklund, P. C., Tenkanen, M. & Willför, S., 2012, In: *Abstracts of Papers of the American Chemical Society*. 243, p. – 1 p.

Carboxymethylated spruce galactoglucomannans: preparation, characterisation, dispersion stability, water-in-oil emulsion stability, and sorption on cellulose surface

Xu, C., Eckerman, C., Smeds, A., Reunanen, M., Eklund, P. C., Sjöholm, R. & Willför, S., 2011, In: *Nordic Pulp and Paper Research Journal*. 26, 2, p. 167–178 12 p.

Isomerism of [Cu-64-NOTA-Bn]-Labeled Radiotracers: Separation of Two Complex Isomers and Determination of Their Interconversion Energy Barrier Using Ion Pair Chromatography

Schlesinger, J., Rajander, J., Ihalainen, J. A., Ramesh, D., Eklund, P. C., Fagerholm, V., Nuutila, P. & Solin, O., 2011, In: *Inorganic Chemistry*. 50, 10, p. 4260–4271 12 p.

Lignans as food constituents with estrogen and antiestrogen activity

Aehle, E., Müller, U., Eklund, P. C., Willför, S., Sippl, W. & Dräger, B., 2011, In: *Phytochemistry*. 72, 18, p. 2396–2405

Structural analysis of sterically hindered 1,4-diols from the naturally occurring lignan hydroxymatairesinol a quantum chemical study

Sandberg, T., Brusentsev, Y., Eklund, P. C. & Hotokka, M., 2011, In: International Journal of Quantum Chemistry. 111, 15, p. 4309–4317 9 p.

Acetylation and characterization of spruce (*Picea abies*) galactoglucomannans

Xu, C., Leppänen, A.-S., Eklund, P. C., Holmlund, P., Sjöholm, R., Sundberg, K. & Willför, S., 2010, In: Carbohydrate Research. 345, 6, p. 810–816 7 p.

A short semi-synthesis and complete NMR-spectroscopic characterization of the naturally occurring lignan glycoside matairesinol 4,4'-di-O-beta-D-diglucoside

Eklund, P. C., Leino, R., 2010, In: Carbohydrate Research. 345, 13, p. 1963–1967 5 p.

Lignans and Norlignans Inhibit Multidrug Resistance Protein 1 (MRP1/ABCC1)-mediated Transport

Wróbel, A., Eklund, P. C., Bobrowska-Hägerstrand, M. & Hägerstrand, H., 2010, In: Anticancer Research. 30, 11, p. 4423–4428 6 p.

Metal-mediated allylation of enzymatically oxidized methyl alpha-D-galactopyranoside

Leppänen, A.-S., Niittymäki, O., Parikka, K., Tenkanen, M., Eklund, P. C., Sjöholm, R. & Willför, S., 2010, In: Carbohydrate Research. 345, 18, p. 2610–2615 6 p.

A novel and efficient synthesis of highly oxidized lignans by a methyltrioxorhenium/hydrogen peroxide catalytic system. Studies on their apoptogenic and antioxidant activity

Bernini, R., Gualandi, G., Crestini, C., Barontini, M., Cristina Belfiore, M., Willför, S., Eklund, P. C. & Saladino, R., 2009, In: Bioorganic and Medicinal Chemistry. 17, 15, p. 5676–5682 7 p.

A selective de-O-methylation of guaiacyl lignans to corresponding catechol derivatives by 2-iodoxybenzoic acid (IBX). The role of the catechol moiety on the toxicity of lignans

Bernini, R., Barontini, M., Mosesso, P., Pepe, G., Willför, S. M., Sjöholm, R. E., Eklund, P. C. & Saladino, R., 2009, In: Organic and Biomolecular Chemistry. 7, 11, p. 2367–2377 11 p.

Pinobatal - a novel spirodienone sesqueneolignan

Sinkkonen, J., Liimatainen, J., Karonen, M., Wiinamäki, K., Eklund, P. C., Sjöholm, R. & Pihlaja, K., 2009, In: Planta Medica. 75, 9, p. 927–927 1 p.

Structural Investigation of Biologically Active Phenolic Compounds Isolated from European Tree Species

Redzyna, I., Ziolkowska, N. E., Majzner, W. R., Willför, S., Sjöholm, R., Eklund, P. C. & Bujacz, G., 2009, In: Molecules. 14, 10, p. 4147–4158 12 p.

Effect of the extraction method on the lignan yield from different plant materials

Willför, S., Holmbom, B., Eklund, P. C., Sjöholm, R. & Smeds, A., 2008, In: Planta Medica. 74, 9, p. 918–918 1 p.

Identification of lignans by liquid chromatography-electrospray ionization ion-trap mass spectrometry

Eklund, P. C., Josefín Backman, M., Kronberg, L., Smeds, A. & Sjöholm, R., 2008, In: Journal of Mass Spectrometry. 43, 1, p. 97–107 11 p.

Semisynthesis and cytotoxicity of some guaiacyl type 9-norlignans

Eklund, P. C. & Sjöholm, R., 2008, In: Planta Medica. 74, 9, p. 1146–1146 1 p.

Antioxidant flavonoids from knotwood of Jack pine and European aspen

Neacsu, M., Eklund, P. C., Sjöholm, R., Pietarinen, S., O. Ahotupa, M., Holmbom, B. & Willför, S., 2007, In: European Journal of Wood and Wood Products. 65, 1, p. 1–6 6 p.

A Sesqueneolignan with a Spirodienone Structure from *Pinus sylvestris* L.

Dr., J. S., JaanaLiimatainen, Karonen, M., Wiinamäki, K., Eklund, P. C., Sjöholm, R. & Prof. Dr., K. P., 2007, In: Angewandte Chemie International Edition. 46, 22, p. 4148–4150 3 p.

Quantification of a broad spectrum of lignans in cereals, oilseeds, and nuts

Smeds, A., Eklund, P. C., Sjöholm, R., Willför, S., Nishibe, S., Deyama, T. & Holmbom, B., 2007, In: Journal of Agricultural and Food Chemistry. 55, 4, p. 1337–1346 10 p.

Rhamnosylation of lignans by a Streptomyces strain

Eklund, P. C., Holmström, T., Al-Ubaydy, L., Sjöholm, R. & Hakala, J., 2006, In: Tetrahedron Letters. 47, 10, p. 1645–1648 4 p.

The plant lignans matairesinol and secoisolariciresinol administered to Min mice do not protect against intestinal tumor formation

Pajari, A.-M., Smeds, A., Oikarinen, S. I., Eklund, P. C., Sjöholm, R. & Mutanen, M., 2006, In: Cancer Letters. 233, 2, p. 309–314 6 p.

Chemical studies on antioxidant mechanisms and free radical scavenging properties of lignans

Eklund, P. C., Långvik, O. K., Wärnå, J. P., Salmi, T. O., Willför, S. M. & Sjöholm, R. E., 21 Sept 2005, In: Organic and Biomolecular Chemistry. 3, 18, p. 3336–3347 12 p.

Bioactive phenolic substances in industrially important tree species. Part 4: Identification of two new 7-hydroxy divanillyl butyrolactol lignans in some spruce, fir, and pine species

Willför, S., Eklund, P. C., Sjöholm, R., Reunanen, M., Sillanpää, R., von Schoultz, S., Hemming, J., Nisula, L. & Holmbom, B., 2005, In: Holzforschung. 59, 4, p. 413–417 5 p.

Chemical studies on antioxidant mechanisms and the free radical scavenging properties of Lignans

Eklund, P. C., Långvik, O., Wärnå, J., Salmi, T., Willför, S. & Sjöholm, R., 2005, In: Organic and Biomolecular Chemistry. 2005, 3, p. 3336–3347

Hydrogenolysis of hydroxymatairesinol over carbon-supported palladium catalysts

Markus, H., Mäki-Arvela, P., Kumar, N., Kul'kova, N. V., Eklund, P. C., Sjöholm, R., Holmbom, B., Salmi, T. & Murzin, D., 2005, In: Catalysis Letters. 103, 1-2, p. 125–131 7 p.

New lignans identified in softwoods

Willför, S., Eklund, P., Sundell, F., Smeds, A., Reunanen, M., Von Schoultz, S., Sjöholm, R., Sillanpää, R., Nisula, L. & Holmbom, B., 2005, In: Appita Annual Conference. 3, p. 421–425 5 p.

Pinoresinol-lariciresinol reductases with different stereospecificity from Linum album and Linum usitatissimum

von Heimendahl, C. B. I., Schäfer, K. M., Eklund, P. C., Sjöholm, R., Schmidt, T. J. & Fuss, E., 2005, In: Phytochemistry. 66, 11, p. 1254–1263 10 p.

A new lariciresinol-type butyrolactone lignan derived from hydroxymatairesinol and its identification in spruce wood

Eklund, P. C., Willför, S. M., Smeds, A. I., Sundell, F. J., Sjöholm, R. E. & Holmbom, B. R., 2004, In: Journal of Natural Products.

Oligolignans in Norway spruce and Scots pine knots and Norway spruce stemwood

Willför, S., Reunanen, M., Eklund, P. C., Sjöholm, R., Kronberg, L., Fardim, P., Pietarinen, S. & Holmbom, B., 2004, In: Holzforschung. 58, 4, p. 345–354 10 p.

The molecular structure and some properties of hydroxymatairesinol. An ab initio study

Taskinen, A., Eklund, P. C., Sjöholm, R. & Hotokka, M., 2004, In: Journal of Molecular Structure: THEOCHEM. 677, 1-3, p. 113–124 12 p.

Antioxidant Activity of Knotwood Extractives and Phenolic Compounds of Selected Tree Species

Willför, S. M., Ahotupa, M. O., Hemming, J. E., Reunanen, M. H. T., Eklund, P. C., Sjöholm, R. E., Eckerman, C. S. E., Pohjamo, S. P. & Holmbom, B. R., 2003, In: Journal of Agricultural and Food Chemistry. 51, 26, p. 7600–7606 7 p.

Knots in trees - a new rich source of lignans

Holmbom, B., Eckerman, C., Eklund, P. C., Hemming, J., Nisula, L., Reunanen, M., Sjöholm, R., Sundberg, A., Sundberg, K. & Willför, S., 2003, In: *Phytochemistry Reviews*. 2, 3, p. 331–340

Synthesis of (-)-Matairesinol, (-)-Enterolactone, and (-)-Enterodiol from the Natural Lignan Hydroxymatairesinol

Eklund, P. C., Lindholm, A., Mikkola, J.-P., Smeds, A., Lehtilä, R. & Sjöholm, R., 2003, In: *Organic Letters*. 5, 4, p. 491–493 3 p.

Synthetic transformation of hydroxymatairesinol from Norway spruce (*Picea abies*) to 7-hydroxysecoisolariciresinol, (+)-lariciresinol and (+)-cyclolariciresinol

Eklund, P. C., Sillanpää, R. & Sjöholm, R., 2002, In: *Journal of the Chemical Society, Perkin Transactions 1*. 16, p. 1906–1910 5 p.

Activities

Hamid Ardehshiri Lordejani

Salo-Ahen, O. (Host) & Eklund, P. C. (Host)
20 Apr 2024 → 31 Dec 2024

Gabriel Burlaud

Eklund, P. C. (Host)
4 Apr 2022 → 17 Jun 2022

Marleny Caceres

Eklund, P. C. (Host)
23 Jan 2022 → 30 Jan 2022

Projects

Bio4all

Grénman, H. (Principal Investigator), Hupa, L. (Co-Principal Investigator) & Eklund, P. C. (Co-Principal Investigator)
Business Finland
01/03/24 → 30/08/26

CIMANET: Circular Materials Bioeconomy Doctoral Education Network

Xu, C. (Principal Investigator), Grénman, H. (Co-Principal Investigator), Eklund, P. C. (Principal Investigator) & Toivakka, M. (Principal Investigator)
01/08/24 → 31/12/27

D2V: From Dust to Value - Circular bio-based residues

Xu, C. (Principal Investigator), Eklund, P. C. (Co-Principal Investigator), Wang, L. (Co-Investigator), Tarasov, D. (Co-Investigator), Nie, Q. (Co-Investigator) & Bhadane, R. R. (Co-Investigator)
Business Finland
01/09/23 → 31/08/26

LigninReSurf: Novel Fiber Surfaces Functionalized by Lignins Refined and Engineered from Finnish Biorefinery Processes

Xu, C. (Principal Investigator) & Eklund, P. C. (Principal Investigator)
Business Finland
01/01/21 → 31/12/23

Depoly2ols: Tailored polyphenols and polyols from fractionation and depolymerization of biorefinery lignins

Grénman, H. (Principal Investigator), Xu, C. (Co-Principal Investigator) & Eklund, P. C. (Co-Principal Investigator)
Business Finland
01/01/24 → 31/12/26

Merits in teaching and pedagogical competence and leadership

2015-2019 Head of teaching in Natural Sciences (utbildningslinjeansvarig)

2018-2023 Head of the master program in chemistry (magisterprogramansvarig)

2015-2019 Member of the board of education at Åbo Akademi University

Pedagogical training: University pedagogics (25 credits)

Supervision: Phd-Students 6; M.Sc. Thesis 23; B.Sc. Thesis 28