

## Affinity of zinc and copper ions for insulin monomers

Gavrilova, Julia; Tõugu, Vello; Palumaa, Peep Metallomics 2014 / p. 1296-1300 : ill

## Amyloid beta 1-42 oligomerization in vitro and characterization with SDS-PAGE, MALDI and ESI MS

Friedemann, Merlin; Tõugu, Vello; Kirsipuu, Tiina; Palumaa, Peep FEBS journal 2013 / p. 140-141

## Application of Differentiated SH-SY5Y Cells for Toxicological Studies of Alzheimer's Amyloid Beta Peptide = Diferentseeritud SH-SY5Y rakkude kasutamine Alzheimeri amüloid beeta peptiidi toksilisuse uurimiseks

Krištal, Jekaterina 2020 <https://digikogu.taltech.ee/et/item/8aef400a-e1ff-4803-a0da-fc2d97c8d451>

## Binding of zinc(II) and copper(II) to the full-length Alzheimer's amyloid-[beeta] peptide

Tõugu, Vello; Karafin, Ann; Palumaa, Peep Journal of neurochemistry 2008 / p. 1249-1259 : ill  
<https://pubmed.ncbi.nlm.nih.gov/18289347/>

## 1,1'-bis(anilino)-4-,4'-bis(naphthalene)-8,8'-disulfonate acts as an inhibitor of lipoprotein lipase and competes for binding with apolipoprotein CII

Lõokene, Aivar; Zhang, L.; Tõugu, Vello; Olivecrona, G. Journal of biological chemistry 2003 / p. 37183-37194  
<https://doi.org/10.1074/jbc.m303894200>

## Chemical modification of met and his residues of amyloid $\beta$ peptide. Influence of copper ions and effect on fibrillization = Metioniini ja histidiini jäälkide keemiline modifitseerimine amüloid- $\beta$ peptiidis. Vaskioonide mõju ja efekt fibrillisatsioonile

Sardis, Merlin 2021 <https://doi.org/10.23658/taltech.19/2021> [https://www.esther.ee/record=b5416905\\*est](https://www.esther.ee/record=b5416905*est)  
<https://digikogu.taltech.ee/et/item/acced69c-c690-4cb5-a972-48e1c4ae5c66>

## Coordination of zinc ions to the key proteins of neurodegenerative diseases: A[beeta], APP, [alfa]-synuclein and PrP

Tõugu, Vello; Palumaa, Peep Coordination chemistry reviews 2012 / p. 2219-2224 : ill

[https://www.researchgate.net/publication/236131300\\_Coordination\\_of\\_zinc\\_ions\\_to\\_the\\_key\\_proteins\\_of\\_neurodegenerative\\_diseases\\_Ab\\_APP\\_alpha-synuclein\\_and\\_PrP](https://www.researchgate.net/publication/236131300_Coordination_of_zinc_ions_to_the_key_proteins_of_neurodegenerative_diseases_Ab_APP_alpha-synuclein_and_PrP)

## Copper(I)-binding properties of de-coppering drugs for the treatment of Wilson disease. $\alpha$ -Lipoic acid as a potential anti-copper agent

Smirnova, Julia; Kabin, Ekaterina; Järving, Ivar; Bragina, Olga; Tõugu, Vello; Plitz, Thomas; Palumaa, Peep Scientific reports 2018 / art. 1463, 9 p. : ill <https://doi.org/10.1038/s41598-018-19873-2> [Journal metrics at Scopus Article at Scopus](#) [Journal metrics at WOS Article at WOS](#)

## Copper(I)-binding properties of de-coppering drugs for treatment of Wilson disease

Smirnova, Julia; Kabin, Ekaterina; Järving, Ivar; Tõugu, Vello; Plitz, T.; Palumaa, Peep The FEBS journal 2017 / p. 337  
<https://doi.org/10.1111/febs.14174>

## Copper(II) ions and the Alzheimer's amyloid- $\beta$ peptide : affinity and stoichiometry of binding

Tõugu, Vello; Friedemann, Merlin; Tiiman, Ann; Palumaa, Peep AIP conference proceedings 2014 / p. 109-111

## Copper(II)-binding equilibria in human blood

Kirsipuu, Tiina; Zadorožnaja, Anna; Smirnova, Julia; Friedemann, Merlin; Plitz, Thomas; Tõugu, Vello; Palumaa, Peep Scientific reports 2020 / art. 5686, 10 p. : ill <https://doi.org/10.1038/s41598-020-62560-4> [Journal metrics at Scopus Article at Scopus](#) [Journal metrics at WOS Article at WOS](#)

## Cu(II) partially protects three histidine residues and the N-terminus of amyloid- $\beta$ peptide from diethyl pyrocarbonate (DEPC) modification

Friedemann, Merlin; Tõugu, Vello; Palumaa, Peep FEBS Open Bio 2020 / p. 1072-1081 <https://doi.org/10.1002/2211-5463.12857>  
[Journal metrics at Scopus Article at Scopus](#) [Journal metrics at WOS Article at WOS](#)

## Direct competition of ATCUN peptides with human serum albumin for copper(II) ions determined by LC-ICP MS

Noormägi, Andra; Golubeva, Tatjana; Berntsson, Elina; Warmländer, Sebastian K.T.S.; Tõugu, Vello; Palumaa, Peep ACS omega 2023 / p. 33912-33919 <https://doi.org/10.1021/acsomega.3c04649>

## Effect of agitation on the peptide fibrillization: Alzheimer's amyloid- b peptide 1-42 but not amylin and insulin fibrils can grow under quiescent conditions

Tiiman, Ann; Noormägi, Andra; Friedemann, Merlin; Krištal, Jekaterina; Palumaa, Peep; Tõugu, Vello Journal of peptide science 2013 / p. 386-391 : ill

## Effect of methionine-35 oxidation on the aggregation of amyloid- $\beta$ peptide

Friedemann, Merlin; Helk, Eneken; Tiiman, Ann; Zovo, Kairit; Palumaa, Peep; Tõugu, Vello Biochemistry and biophysics reports 2015 / p. 94-99 : ill <http://dx.doi.org/10.1016/j.bbrep.2015.07.017>

## Effect of Zn(II) and Cu(II) ions on aggregation and fibrillation of amyloid-beta(1-42) peptide

**Effects of Zn<sup>2+</sup> ions and environmental conditions on the fibrillization of insulin = Zn<sup>2+</sup> ionic and environmental conditions on the fibrillization of insulin**  
**mõju insuliini fibrillisatsioonile**  
**Noormägi, Andra** 2018 <https://digi.lib.ttu.ee/i/?10378>

**Ensümaatilise atsüüliülekande reaktsiooni kasutamine orgaaniliste ühendite sünteesil**  
Tõugu, Vello XVI Eesti keemiatänav : teaduskonverentsi ettekannete referaatid = 16th Estonian chemistry days : abstracts of scientific conference 1995 / lk. 145-146

**Evaluation of Zn<sup>2+</sup>- and Cu<sup>2+</sup>-binding affinities of native Cu,Zn-SOD1 and its G93A mutant by LC-ICP MS**  
**Smirnova, Julia; Gavrilova, Julia; Noormägi, Andra; Valmsen, Karin; Pupart, Hegne; Luo, Jinghui; Tõugu, Vello; Palumaa, Peep** Molecules 2022 / art. 3160 <https://doi.org/10.3390/molecules27103160> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

**Faculty of Science : [Tallinn University of Technology]**  
2012 [https://www.esther.ee/record=b2890162\\*est](https://www.esther.ee/record=b2890162*est)

**Fibrillization of the mixtures of amyloid beta 1-40 and 1-42**  
**Krištal, Jekaterina; Friedemann, Merlin; Tõugu, Vello; Palumaa, Peep** Neurodegenerative diseases 2015 / p. 364  
<http://dx.doi.org/10.1159/000381736>

**In vitro fibrillization of Alzheimer's amyloid-β peptide (1-42)**  
**Tiiman, Ann; Krištal, Jekaterina; Palumaa, Peep; Tõugu, Vello** AIP advances 2015 / p. 092401-1 - 092401-12 : ill  
<http://dx.doi.org/10.1063/1.4921071>

**Insulin fibrillization at acidic and physiological pH values is controlled by different molecular mechanisms**  
**Noormägi, Andra; Valmsen, Karin; Tõugu, Vello; Palumaa, Peep** The protein journal 2015 / p. 398-403 : ill  
<http://dx.doi.org/10.1007/s10930-015-9634-x>

**Interactions of Alzheimer's amyloid-β peptides with Zn(II) and Cu(II) ions = Alzheimeri amüloid-β peptiidide interaktsioonid Zn(II) ja Cu(II) ionicidega**  
**Tiiman, Ann** 2012 [https://www.esther.ee/record=b2866174\\*est](https://www.esther.ee/record=b2866174*est)

**Interactions of zinc(II) and copper(II) to the full-length Alzheimer's amyloid-B peptide in vitro**  
**Karafin, Ann; Palumaa, Peep; Tõugu, Vello** FEBS journal 2008 / Suppl. 1, p. 222

**Interactions of Zn(II) and Cu(II) ions with Alzheimer's amyloid-beta peptide. Metal ion binding, contribution to fibrillization and toxicity**  
**Tõugu, Vello; Tiiman, Ann; Palumaa, Peep** Metallomics 2011 / p. 250-261 : ill

**Interference of low-molecular substances with the thioflavin-T fluorescence assay of amyloid fibrils**  
**Noormägi, Andra; Primar, Kateryna; Tõugu, Vello; Palumaa, Peep** Journal of peptide science 2012 / p. 59-64 : ill

**Kemofoobia - ülearune paanika või põhjendatud hirm**  
Kinnunen, Katarina Studioosus 2021 / lk. 34-35 : fot [https://www.esther.ee/record=b1558644\\*est](https://www.esther.ee/record=b1558644*est)

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Biokeemia : lühikursus : õpik kõrgkoolidele 2016 / lk. 67-127 : ill

**Label-free high-throughput screening assay for inhibitors of Alzheimer's amyloid-[beta] peptide aggregation based on MALDI MS**  
**Zovo, Kairit; Helk, Eneken; Karafin, Ann; Tõugu, Vello; Palumaa, Peep** Analytical chemistry 2010 / p. 8558-8565

**Lipase action on some non-triglyceride substrates**  
**Vallikivi, Imre; Lille, Ülo; Lõokene, Aivar; Metsala, Andrus; Sikk, Peeter; Tõugu, Vello; Vija, Heiki; Villo, Ly; Parve, Omar** Journal of molecular catalysis B : enzymatic 2003 / 5/6, p. 279-298 : ill

**Lipase-catalysed enantioselective hydrolysis : interpretation of the kinetic results in terms of frontier orbital localisation**  
Parve, Omar; Vallikivi, Imre; Metsala, Andrus; Lille, Ülo; Tõugu, Vello; Sikk, Peeter; Käämbre, Tuuli; Vija, Heiki; Pehk, Tõnis Tetrahedron 1997 / 13, p. 4889-4900

**Lipase-catalysed enantioselective hydrolysis of bicyclo[3.2.0]heptanol esters in supercritical carbon dioxide**  
Parve, Omar; Vallikivi, Imre; Lahe, Lilja; Metsala, Andrus; Lille, Ülo; Tõugu, Vello; Vija, Heiki; Pehk, Tõnis Bioorganic & medicinal

"Lipolase" allub sekundaarse alkoholide enantioelistuse üldisele reeglile nii vesi kui ka superkriitilise SKCO<sub>2</sub> keskkonnas = "Lipolase" obeys the general enantiopreference rule of secondary alcohols in water and supercritical (SC)CO<sub>2</sub> media as well

Lille, Ülo; Metsala, Andrus; Parve, Omar; Tõugu, Vello; Vija, Heiki XVII Eesti keemiapäevad : teaduskonverentsi ettekannete referaadid = 17th Estonian Chemistry Days : abstracts of scientific conference 1996 / lk. 101-102

**Mercury ion binding to apolipoprotein E variants ApoE2, ApoE3, and ApoE4 : similar binding affinities but different structure induction effects**

Berntsson, Elina; Sardis, Merlin; Noormägi, Andra; Jarvet, Jüri; Roos, Per M.; Tõugu, Vello; Gräslund, Astrid; Wärmländer, Sebastian K.T.S. ACS omega 2022 / p. 28924-28931 <https://doi.org/10.1021/acsomega.2c02254> [Journal metrics at Scopus Article at Scopus](#) [Journal metrics at WOS Article at WOS](#)

**Metallothionein 2A affects the cell respiration by suppressing the expression of mitochondrial protein cytochrome c oxidase subunit II**

Bragina, Olga; Gurjanova, Karina; Krištal, Jekaterina; Kulp, Maria; Karro, Niina; Tõugu, Vello; Palumaa, Peep Journal of bioenergetics and biomembranes 2015 / p. 209-216 : ill <http://dx.doi.org/10.1007/s10863-015-9609-9>

**Monitoring of A-beta fibrillization using an improved fluorimetric method**

Karafin, Ann; Palumaa, Peep; Tõugu, Vello New Trends in Alzheimer and Parkinson Disorders : ADPD 2009 2009 / p. 255-259 <https://www.etis.ee/Portal/Publications/Display/979eb21d-601b-4aa1-b941-121eff184407>

**Monitoring of amyloid-beta fibrillization using an improved fluorimetric method [Electronic resource]**

Karafin, Ann; Palumaa, Peep; Tõugu, Vello Neurodegenerative diseases 2009 / S1, Alzheimer's and Parkinson's Diseases : Advances, Concepts and New Challenges, p. 799 [CD-ROM] <https://www.etis.ee/Portal/Publications/Display/979eb21d-601b-4aa1-b941-121eff184407>

**Mürgistus koliinesteraasi inhibiitoriga - mida see tähendab?**

Lauri, Vahur err.ee 2020 / fot [Mürgistus koliinesteraasi inhibiitoriga - mida see tähendab?](#)

**NMR monitoring of lipase-catalyzed reactions of prostaglandins : preliminary estimation of reaction velocities**

Vallikivi, Imre; Järving, Ivar; Pehk, Tõnis; Samel, Nigulas; Tõugu, Vello; Parve, Omar Journal of molecular catalysis B : enzymatic 2004 / p. 15-19 : ill

**Oxidation of Methionine-35 in Alzheimer's amyloid-beta peptide and the aggregation of the oxidized peptide**

Friedemann, Merlin; Helk, Eneken; Tiiman, Ann; Zovo, Kairit; Palumaa, Peep; Tõugu, Vello SpringerPlus 2015 / p. 20, P13 <http://dx.doi.org/10.1186/2193-1801-4-S1-P13>

**Redox and metal ion binding properties of human insulin-like growth factor 1 determined by electrospray ionization mass spectrometry**

Smirnova, Julia; Muhhina, Jekaterina; Tõugu, Vello; Palumaa, Peep Biochemistry 2012 / p. 5851-5859 : ill <https://pubs.acs.org/doi/10.1021/bi300494s>

**Redox properties of Cys2His2 and Cys4 zinc fingers determined by electrospray ionization mass spectrometry**

Smirnova, Julia; Kabin, Ekaterina; Tõugu, Vello; Palumaa, Peep FEBS Open Bio 2018 / p. 923 - 931 <https://doi.org/10.1002/2211-5463.12422> [Journal metrics at Scopus Article at Scopus](#) [Journal metrics at WOS Article at WOS](#)

**Role of metal ions in amyloidogenic properties of insulin and superoxide dismutase = Metallioonide roll insuliini ja superoksiidi dismutaasi amüloidogeensetes omadustes**

Gavrilova, Julia 2022 <https://doi.org/10.23658/taltech.44/2022> <https://digikogu.taltech.ee/et/item/693de590-2d9f-43d6-989e-ebac0544151d> [https://www.estet.ee/record=b5511706\\*est](https://www.estet.ee/record=b5511706*est)

**Surface carboxylation or PEGylation decreases CuO nanoparticles' cytotoxicity to human cells in vitro without compromising their antibacterial properties**

Kubo, Anna-Liisa; Vasiliev, Grigory; Vija, Heiki; Krištal, Jekaterina; Tõugu, Vello; Visnapuu, Meeri; Kisand, Vambola; Kahru, Anne; Bondarenko, Olesja Archives of toxicology 2020 / p. 1561-1573 : ill <https://doi.org/10.1007/s00204-020-02720-7>

**Zn(II) and Cu(II)-induced non-fibrillar aggregates of amyloid-[beta](1-42) peptide are transformed to amyloid fibrils both spontaneously and under the influence of metal chelators**

Tõugu, Vello; Karafin, Ann; Zovo, Kairit; Chung, Roger S.; Howells, Claire; West, Adrian; Palumaa, Peep Journal of neurochemistry 2009 / 6, p. 1784-1795 : ill

**Zn(II) ions co-secreted with insulin suppress inherent amyloidogenic properties of monomeric insulin**

Noormägi, Andra; Gavrilova, Julia; Smirnova, Julia; Tõugu, Vello; Palumaa, Peep Biochemical journal 2010 / p. 511-518 <https://pubmed.ncbi.nlm.nih.gov/20632994/>

**Zn(II) ions inhibit fibrillization of monomeric insulin**

Noormägi, Andra; Gavrilova, Julia; Smirnova, Julia; Tõugu, Vello; Palumaa, Peep FEBS journal 2010 / Suppl. 1, p. 256

**The missing link in the amyloid cascade of Alzheimer's disease - metal ions**

Tiiman, Ann; Palumaa, Peep; Tõugu, Vello Neurochemistry international 2013 / p. 367-378 : ill

**The modelling and kinetic investigation of the lipase-catalysed acetylation of steroisomeric prostaglandins**

Vallikivi, Imre; Fransson, Linda; Hult, Karl; Järving, Ivar; Pehk, Tõnis; Samel, Nigulas; Tõugu, Vello; Villo, Ly; Parve, Omar Journal of molecular catalysis B : enzymatic 2005 / p. 62-69 : ill

**Toxicity of amyloid beta 1-40 and 1-42 on SH-SY5Y cell line**

Krištal, Jekaterina; Bragina, Olga; Metsla, Kristel; Palumaa, Peep; Tõugu, Vello SpringerPlus 2015 / p. 21-22, P19

<http://dx.doi.org/10.1186/2193-1801-4-S1-P19>

**Toxicity of amyloid- $\beta$  peptides varies depending on differentiation route of SH-SY5Y cells**

Krištal, Jekaterina; Metsla, Kristel; Bragina, Olga; Tõugu, Vello; Palumaa, Peep Journal of Alzheimer's disease 2019 / p. 879-887 <https://doi.org/10.3233/JAD-190705> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Vaskioonide roll Alzheimeri amüloidse beeta peptiide [p. o. peptiidi] aggregatsioonil ja toksilisusel**

Tõugu, Vello; Tiiman, Ann; Palumaa, Peep XXXII Eesti Keemiatäiendatud konverentsi teesid 2011 / lk. 102

**Üks küsimus : milline on teie jaoks ideaalne ülikool?**

Mente et Manu 2020 / lk. 24-25 , 34-35, 44-45 : portr [https://www.esther.ee/record=b1242496\\*est](https://www.esther.ee/record=b1242496*est)

**$\alpha$ -Lipoic acid has the potential to normalize copper metabolism, which is dysregulated in Alzheimer's disease**

Metsla, Kristel; Kirss, Sigrid; Laks, Katrina; Sildnik, Gertrud; Palgi, Mari; Palumaa, Teele; Tõugu, Vello; Palumaa, Peep Journal of Alzheimer's Disease 2022 / p. 715-728 <https://doi.org/10.3233/JAD-215026> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

**Электростатический солевой эффект во взаимодействиях ацетилхолинэстеразы и трипсина с катионными лигандами : автореферат диссертации ... кандидата химических наук (02.00.03)**

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