

CARBOHYDRATE SCIENCE AND NMR CENTER PUBLICATIONS

(updated June 2022)

2022

455. **Thermodynamic insight on the effects of low-molecular weight heparins on Antithrombin III.** Saitta F., Masuri J., Signorelli M., Bertini S., Bisio A., Fessas D. 2022, *Thermochim. Acta.* <https://doi.org/10.1016/j.tca.2022.179248>

454. **Structural variation in the linkage region of pharmaceutical heparin arising from oxidative treatments during manufacture.** Urso E., Mantione G., Sala F., Yates E.A., Guerrini M., Naggi A. *Carbohydr. Res.* 514 (2022).
<https://doi.org/10.1016/j.carres.2022.108540>

453. **NMR spectroscopy and chemometric models to detect a specific non-porcine ruminant contaminant in pharmaceutical heparin.** Colombo E., Mauri L., Marinozzi M., Rudd T.R., Yates E.A., Ballabio D., Guerrini M. 2022 *J. Pharm. Biomed. Anal.* 214, 114724

452. **Initial contact between SARS-CoV-2 spike S1 protein and cell surface glycans involves multiple binding modes.** Parafioriti M., Ni M., Petitou M., Mycroft-West M.J., Rudd T.R., Gandhi N.S., Ferro V., Turnbull J.E., Lima M.A., Skidmore M.A., Fernig D.G., Yates E.A., Bisio A., Guerrini M., and Elli S. *ChemRxiv.* 2022, DOI: 10.26434/chemrxiv-2022-21brb

451. **Pentosan polysulfate inhibits attachment and infection by SARS-CoV-2 *in vitro*: insights into structural requirements for binding.** Bertini S., Alekseeva A., Elli S., Pagani I., Zanzoni S., Eisele G., Krishnan R., Maag K.P., Reiter C., Lenhart D., Gruber R., Yates E.A., Vicenzi E., Naggi A., Bisio A., Guerrini M. 2022 *Thromb. Haemost.* 122, 867-880. <https://doi.org/10.1055/a-1807-0168>

450. **Professor Casu's contribution to cyclodextrins, the remarkable cage-shape molecules: a review.** Torri G., Naggi A., Lichtfouse E., Crini G. 2022 *Environ. Chem. Letters* <https://doi.org/10.1007/s10311-022-01417-w>

449. **Suspended Multifunctional Nanocellulose as Additive for Mortars.** Diamanti M.V., Tedeschi C., Taccia M.; Torri G., Massironi N., Tognoli C., Vismara E. *Nanomaterials* 2022,12, 1093. <https://doi.org/10.3390/nano12071093>

448. **Prevention of triglyceridemia by (non-) anticoagulant heparin (oids) does not preclude transplant vasculopathy and glomerulosclerosis.** Shrestha, P., Katta, K., Talsma, D., Naggi, A., Hillebrands, J. L., van de Sluis, B., & Van Den Born, J. (2022). *Frontiers in cell and developmental biology*, 10.

447. **Suspended Multifunctional Nanocellulose as Additive for Mortars** Diamanti MV, Tedeschi C, Taccia M, Torri G, Massironi N, Tognoli C, Vismara E. *Nanomaterials* (Basel). 2022 Mar 26;12(7):1093. doi: 10.3390/nano12071093. PMID: 35407210; PMCID: PMC9000320.

446. **Innovative technologies to remove alkylphenols from wastewater: a review** Crini, G., Cosentino, C., Bradu, C., Fourmentin, M., Torri, G., Ruzimuradov, O., ... & Morin-Crini, N. (2022). *Environmental Chemistry Letters*, 1-32.

445. **Worldwide cases of water pollution by emerging contaminants: a review** Morin-Crini, N., Lichtfouse, E., Liu, G., Balaram, V., Ribeiro, A. R. L., Lu, Z., G. Torri, ... & Crini, G. (2022). *Environmental Chemistry Letters*, 1-28.

444. **Removal of emerging contaminants from wastewater using advanced treatments. A review.** Morin-Crini, N., Lichtfouse, E., Fourmentin, M., Ribeiro, A. R. L., Noutsopoulos, C., Mapelli, F., G. Torri... & Crini, G. (2022). *Environmental Chemistry Letters*, 1-43.

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443. **Enisamium Inhibits SARS-CoV-2 RNA Synthesis.** Elli S., Bojkova D., Bechte M., Vial T., Boltz D., Muzzio M., Peng X., Sala F., Cosentino C., Goy A., Guerrini M., Müller L., Cinatl J., Margitich V., te Velthuis AJW. 2021 *Biomedicines*, 9, 1254

442. **An additional piece to the heparin biosynthesis puzzle.** Gardini C., Bisio A., Mazzini G., Guerrini M., Naggi A., Alekseeva A. Saturated tetrasaccharide profile of enoxaparin. 2021, *Carbohydr. Polym.* 273, 118554-11865. <https://doi.org/10.1016/j.carbpol.2021.118555>

441. **130 years of cyclodextrin discovery for health, food, agriculture, and the industry: A review.** Morin-Crini, N., Fourmentin, S., Fenyvesi, É., Lichtfouse, E., Torri, G., Fourmentin, M., & Crini, G. (2021). *Environmental Chemistry Letters*, 19(3), 2581-2617.

440. **Evidence of a putative glycosaminoglycan binding site on the glycosylated SARS-CoV-2 spike protein N-terminal domain** Schuurs ZP, Hammond E, Elli S, Rudd TR, Mycroft-West CJ, Lima MA, Skidmore MA, Karlsson R, Chen YH, Bagdonaite I, Yang Z, Ahmed YA, Richard DJ, Turnbull J, Ferro V, Coombe DR, Gandhi NS. *Comput Struct Biotechnol J.* 2021;19:2806-2818.

439. **Combined Analytical Approaches to Standardize and Characterize Biomaterials Formulations: Application to Chitosan-Gelatin Cross-Linked Hydrogels** Magli, S. Rossi, L. Cosentino, C. Bertini S., Nicotra F., and Russo, L. *Biomolecules* 2021, 11, 683. <https://doi.org/10.3390/biom11050683>.

438. **Enisamium is an inhibitor of the SARS-CoV-2 RNA polymerase and shows improvement of recovery in COVID-19 patients in an interim analysis of a 3 clinical trial.** Holubovska, H., Bojkova, D., Elli, S., Bechtel, M., Boltz, D., Muzzio, M., Peng, X.,

Sala, F., Cosentino, C., Mironenko, A., Milde, J., Lebed, Y., Stammer, H., Goy, A., Guerrini, M., Mueller, L., Cinatl, J., R Margitich, V., Velthuis, AJW. (2021) medRxiv <https://doi.org/10.1101/2021.01.05.21249237>

437. **Glycosaminoglycans from *Litopenaeus vannamei* Inhibit the Alzheimer's Disease β Secretase, BACE1** (2021) Mycroft-West, C.J., Devlin, A.J., Cooper, L.C., Guerrini, M., Lima, M.A., Skidmore, M.A. *Marine drugs*, 19(4).

436. **Supramolecular structuring of hyaluronan-lactose-modified chitosan matrix: Towards high-performance biopolymers with excellent biodegradation.** (2021) Ladiè, R., Cosentino, C., Tagliaro, I., Bianchini, G., Bertini, S. *Biomolecules*, 11(3), pp. 1–19, 389

435. **Nanocellulose from cotton waste and its glycidyl methacrylate grafting and allylation: Synthesis, characterization and adsorption properties.** Vismara, E., Bertolini, G., Bongio, C., Cosentino, C., Torri, G. *Nanomaterials*, 2021, 11(2), pp. 1–26, 476

434. **MD simulation of the interaction between sialoglycans and the second sialic acid binding site of influenza A virus N1 neuraminidase.** (2021) Elli, S., Gambacorta, N., Rudd, T.R., Matrosovich, M., Guerrini, M. *Biochemical Journal*, 478(2), pp. 423–441

433. **Feltro di lino come materiale adsorbente per il trattamento delle acque contaminante da metalli.** (2021) G. Crini, C. Mongiovía, V. Placet, C. Cosentino, B. Martel, C. Bradu, N. Morin-Crini *La chimica & l'ambiente La Chimica e L'Industria online* N° 1.

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431. **Sorption of 4-n-nonylphenol, 4-n-octylphenol, and 4-tert-octylphenol on cyclodextrin polymers.** Crini, G., Bradu, C., Fourmentin, M., Cosentino, C., Ribeiro, A. R. L., & Morin-Crini, N. (2021). *Environmental Science and Pollution Research*, 1-11.

430. **Simultaneous Removal of Inorganic and Organic Pollutants from Polycontaminated Wastewaters on Modified Hemp-Based Felts.** Crini, G., Bradu, C., Cosentino, C., Staelens, J. N., Martel, B., Fourmentin, M., G, Torri & Morin-Crini, N. *Rev. Chim.*, 72(1), (2021), 25-43

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429. **Heparin Inhibits Cellular Invasion by SARS-CoV-2: Structural Dependence of the Interaction of the Spike S1 Receptor-Binding Domain with Heparin** Mycroft-West C., Su D., Pagani I, Rudd T., Elli S., Ghandi N., Guimond S., Miller G., Meneghetti M., Nader H., Li Y., Nunes Q., Procter P., Mancini N., Clementi M., Bisio A., Forsyth N., Ferro V., Turnbull J., Guerrini M., Fernig D., Vicenzi E., Yates E., Lima M., Skidmore M.A. *Thrombosis and Haemostasis*, 2020, 120(12), pp. 1700–1715

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427. **Characterization of an antibody recognizing the conserved inner core of pseudomonas aeruginosa lipopolysaccharides** Elli, S., Alekseeva, A., Ramakrishnan, B., Plante, O., Guerrini, M. Biochemistry, 59(43), pp. 4202–4211
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424. **Novel N-acetyl-Glycol-split heparin biotin-conjugates endowed with anti-heparanase activity** Esposito, E., Vlodavsky, I., Barash, U., Giannini, G., Naggi, A. European Journal of Medicinal Chemistry, 2020, 186, 111831.
423. **Breakthroughs in medicinal chemistry: New targets and mechanisms, new drugs, new hopes-7 (2018)** Gütschow, M., Eynde, J.J.V., Jampilek, J. Torri, G., Rautio, J., Muñoz-Torrero, D. Molecules, 2020, 25(13), 2968
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412. **A Glycosaminoglycan Extract from *Portunus pelagicus* Inhibits BACE1, the β Secretase Implicated in Alzheimer's Disease.** Mycroft-West CJ, Cooper LC, Devlin AJ, Procter P, Guimond SE, Guerrini M, Fernig DG, Lima MA, Yates EA, Skidmore MA. *Mar Drugs*. 2019 May 16;17(5). pii: E293. doi: 10.3390/md17050293
411. **SAX-HPLC and HSQC NMR Spectroscopy: Orthogonal Methods for Characterizing Heparin Batches Composition.** Spelta F, Liverani L, Peluso A, Marinozzi M, Urso E, Guerrini M, Naggi A. *Front Med (Lausanne)*. 2019 Apr 18;6:78. doi:10.3389/fmed.2019.00078. eCollection 2019.
410. **Introduction to the Molecules Special Edition Entitled '*Heparan Sulfate and Heparin: Challenges and Controversies*': Some Outstanding Questions in Heparan Sulfate and Heparin Research.** Yates EA, Gallagher JT, Guerrini M. *Molecules*. 2019 Apr 10;24(7). pii: E1399. doi: 10.3390/molecules24071399.
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