



J. Serb. Chem. Soc. **00(0)** S1-S8 (2026)

Journal of
the Serbian
Chemical Society

JSCS-info@shd.org.rs • www.shd.org.rs/JSCS

Supplementary material

SUPPLEMENTARY MATERIAL TO
**Syntheses and computational analyses of selected macrolide derivatives
derived from clarithromycin A**

BILJANA B. ARSIC^{1,2*}, GARETH A. MORRIS³, ABDOLREZA HASSANZADEH^{2,4}, OLGA
P. JOVANOVIC¹, JILL BARBER² AND DJORDJE GLISIN¹

¹University of Nis, Faculty of Sciences and Mathematics, Department of Chemistry, Visegradska
33, Nis, Republic of Serbia, ²Division of Pharmacy and Optometry, School of Health Sciences,
University of Manchester, Manchester, United Kingdom, ³Department of Chemistry, University
of Manchester, Manchester M13 9PL, United Kingdom, ⁴Pharmaceutics Research Center,
Institute of Pharmaceutical Sciences, Kerman University of Medical Sciences, Kerman, Iran.

* Corresponding author. E-mail: Biljana.Arsic@pmf.edu.rs
<https://doi.org/10.2298/JSC251104018A>

a)

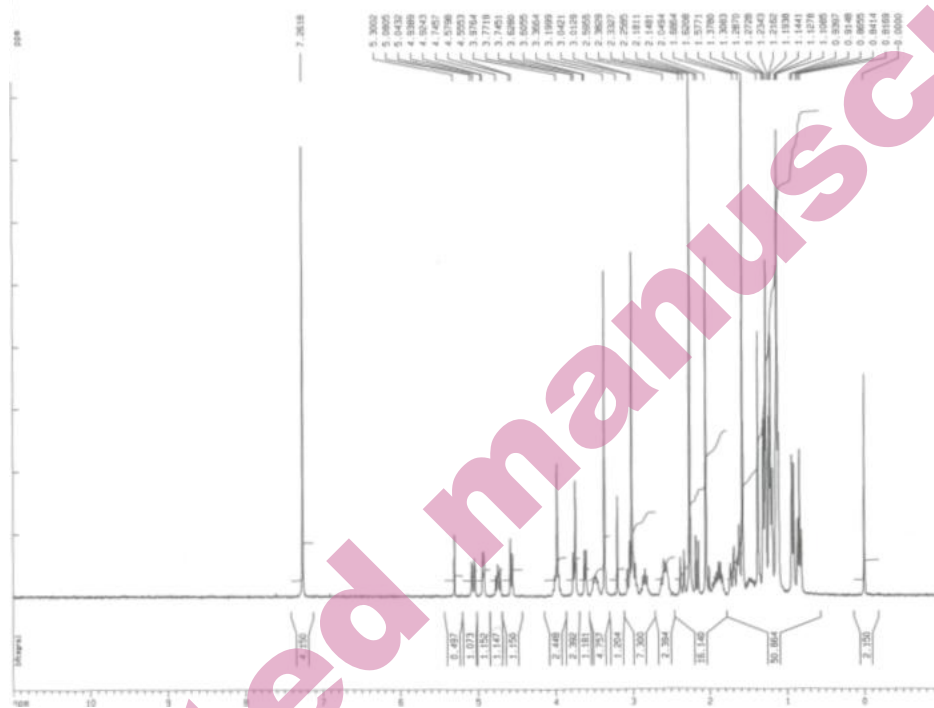


Figure S-1. a) The ^1H NMR spectrum of 2'-O-acetyl-clarithromycin A (I).

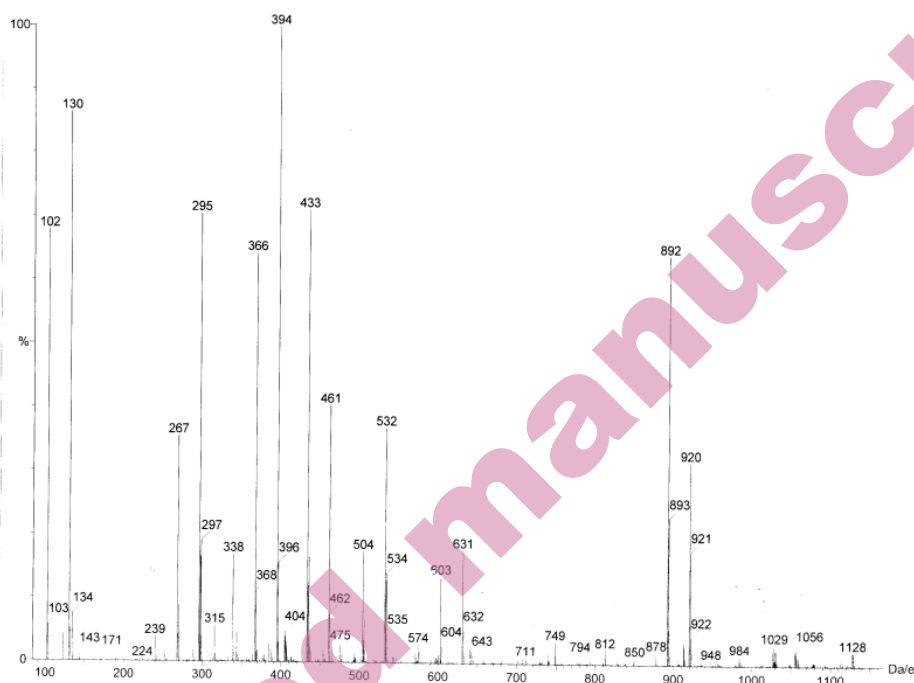


Figure S-2. Mass spectrum (ES+) of 2'-O-acetyl-4''-O-(2-cyanoethyl)diisopropylphosphoramidite-clarithromycin A (2).

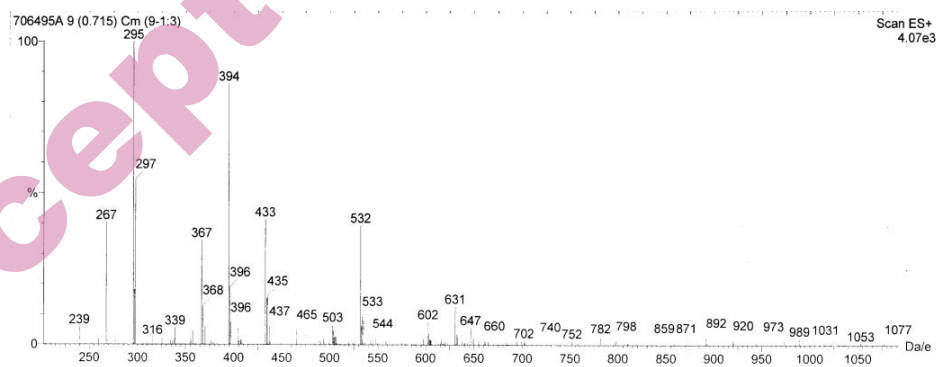


Figure S-3. Mass spectrum (ES+) of 2'-O-acetyl-4'-O-(2-cyanoethyl)diisopropylphosphoramidite-clarithromycin A (2).

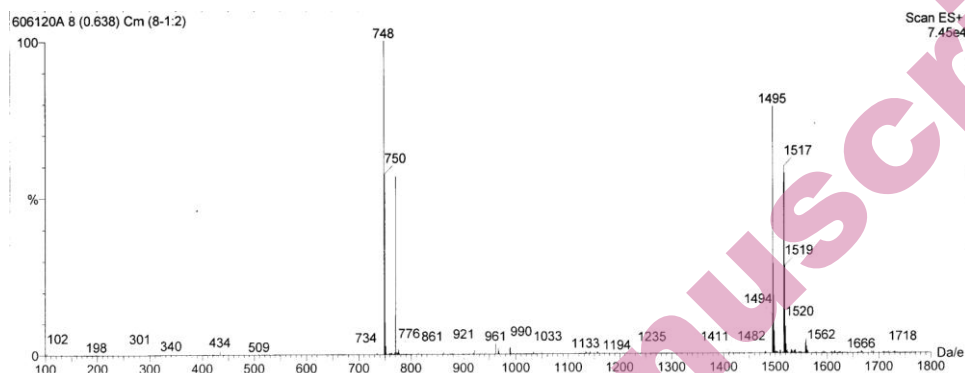


Figure S-4. Mass spectrum (ES+) of 4''-O-phosphonyl-clarithromycin A (3).

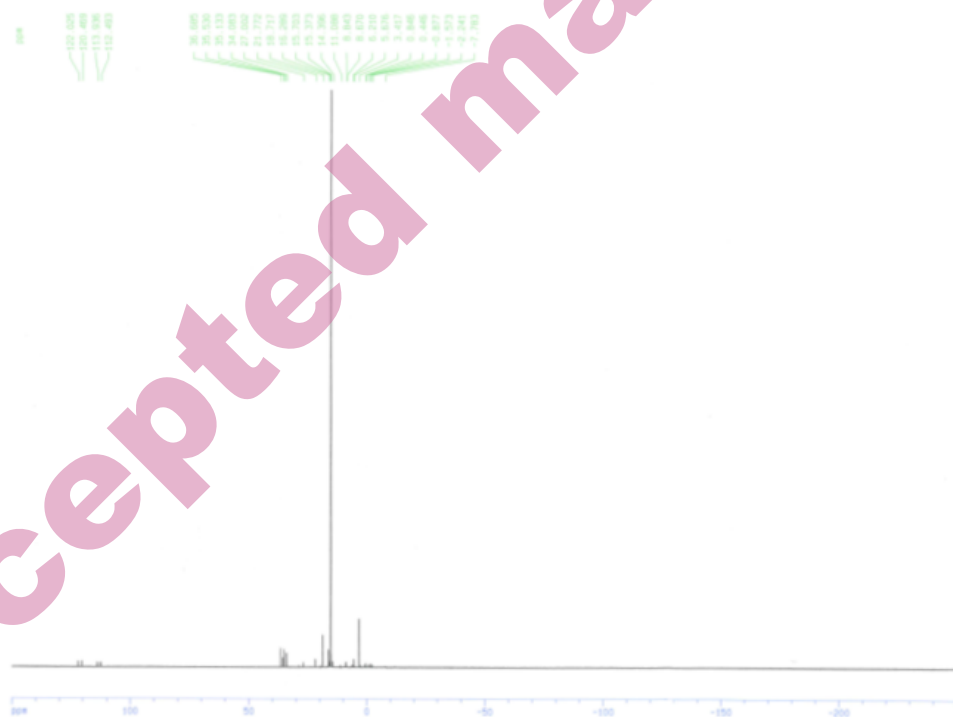


Figure S-5. ^{31}P NMR spectrum of the mixture 2-cyanoethyl *N,N*-diisopropylchlorophosphoramidite, *N*-ethyl-diisopropylamine and water.

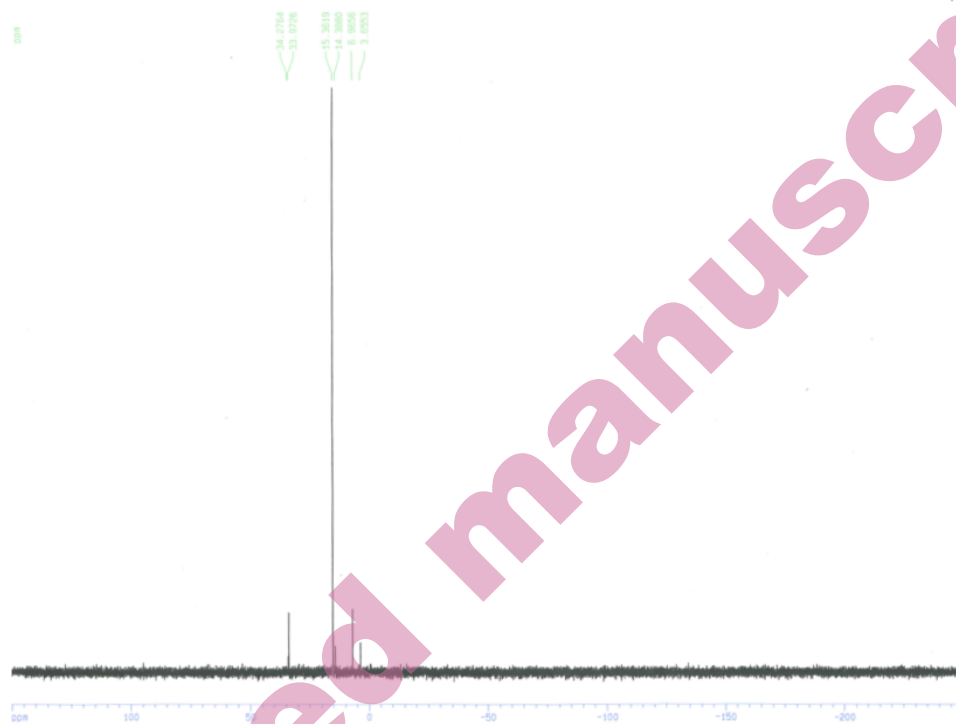


Figure S-6. ^{31}P NMR spectrum of the reaction mixture after 1 day when 2-cyanoethyl *N,N*-diisopropylchlorophosphoramidite was in 5 fold excess.

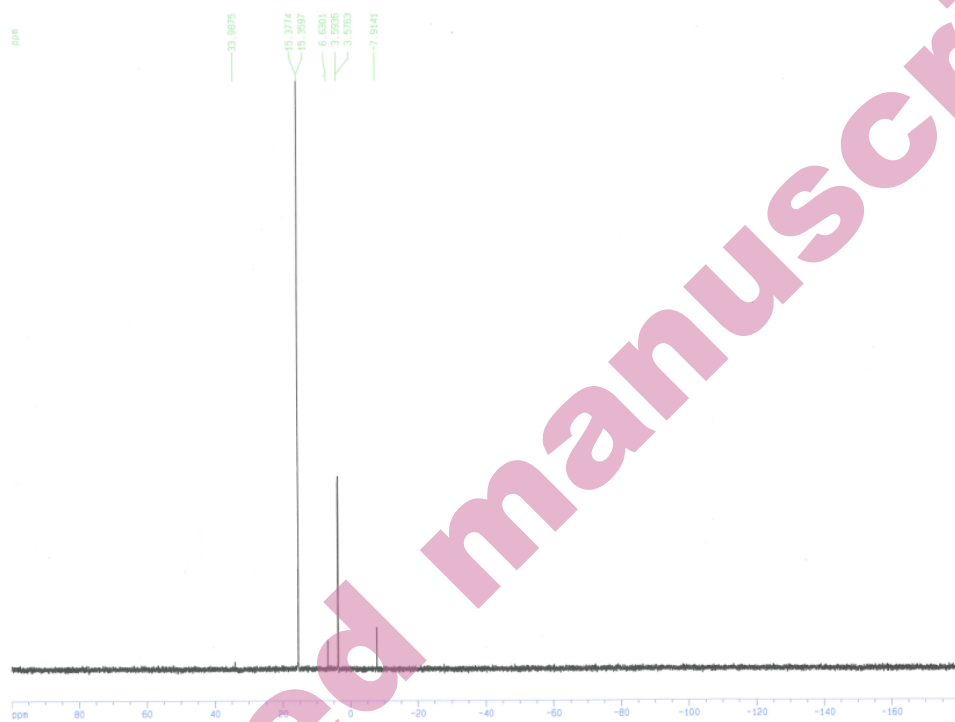


Figure S-7. ^{31}P NMR spectrum of a reaction mixture with DMAP (4-dimethylaminopyridine) as a catalyst.

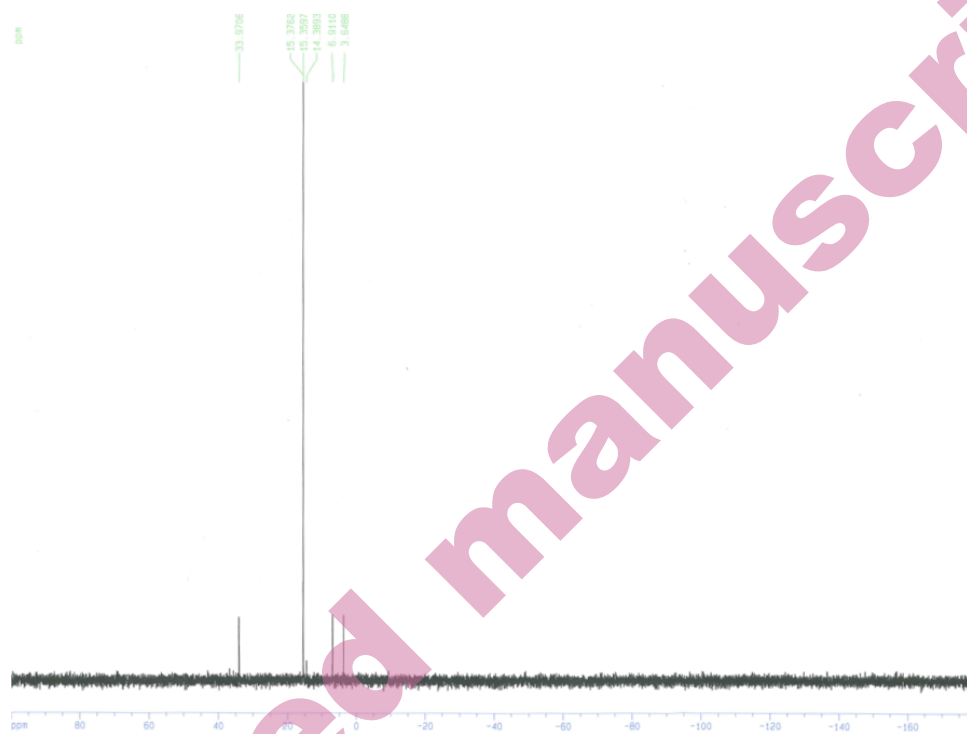


Figure S-8. ^{31}P NMR spectrum of the reaction mixture on heating at 40 °C under reflux.