JOURNAL OF ASIAN NATURAL PRODUCTS RESEARCH, 2018
https://doi.org/10.1080/10286020.2018.1451521

Taylor & Francis
Taylor & Francis Group

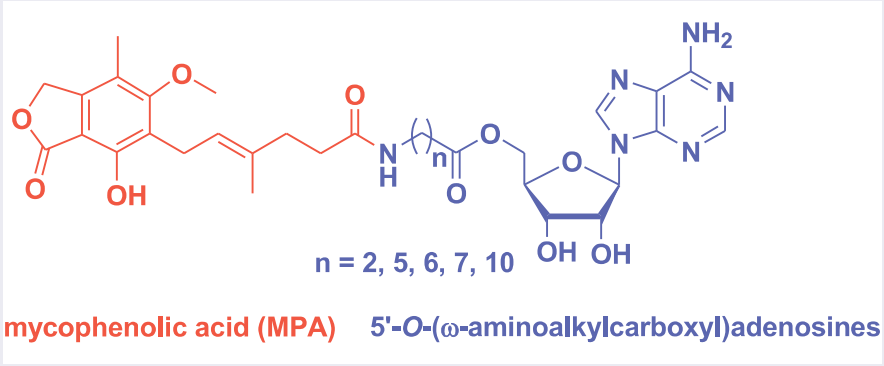
Synthesis and antiproliferative activity of new mycophenolic acid conjugates with adenosine derivatives

Michał Prejs[a], Grzegorz Cholewiński[a], Piotr Trzonkowski[b], Agata Kot-Wasik[c] and Krystyna Dzierzbicka[a]

[a]Department of Organic Chemistry, Gdansk University of Technology, Gdansk PL 80-233, Poland; [b]Department of Clinical Immunology and Transplantology, Medical University of Gdansk, Gdansk 80-211, Poland; [c]Department of Analytical Chemistry, Gdansk University of Technology, Gdansk 80-233, Poland

ABSTRACT

New conjugates of mycophenolic acid (MPA) and adenosine derivatives were synthesized and assessed as potential immunosuppressants on Jurkat cell line and peripheral blood mononuclear cells (PBMC) from healthy donors. As compared to MPA, all compounds were found to be more active against Jurkat cell line. The antiproliferative activities were compared with MPA and adenosine, in both 2′,3′-*O*-isopropylidene protected and free hydroxyl groups possessing forms. The obtained results were also discussed in terms of selectivity index, defined as $SI = IC_{50}/EC_{50}$.



ARTICLE HISTORY
Received 15 December 2017
Accepted 9 March 2018

KEYWORDS
Mycophenolic acid; adenosine derivatives; antiproliferative activity; esterification

1. Introduction

Mycophenolic acid (MPA) **1** (Figure 1) is a reversible, uncompetitive, and potent inosine-5′-monophosphate dehydrogenase (IMPDH) inhibitor. This compound is currently used as immusuppressive drug. It is available as prodrugs: CellCept (mycophenolate mofetil (MMF), Roche AG) and Myfortic (mycophenolic acid sodium salt (MPS), Novartis Pharma AG) [1–5]. Despite high efficiency, MPA causes some severe side effects within

CONTACT Grzegorz Cholewiński grzchole@pg.edu.pl
The supplemental data for this article is available online at https://doi.org/10.1080/10286020.2018.1451521.