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ADP-ribose analogues: synthetic strategy towards inhibitors for viral macrodomains: SARS-CoV-2

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"… and it should be fun. In work and in life, we're all supposed to get along. We're supposed to have so much fun, like puppy dogs with our tails wagging. It's supposed to be great living; it's supposed to be fantastic."

- David Lynch

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List of abbreviations

A	adenine *or* adenosine
Ac	acetyl
ACN	acetonitrile
ADP	adenosine diphosphate
ADPr	adenosine diphosphate ribose
All	allyl
AMP	adenosine monophosphate
ARH	ADP-ribosyl hydrolase
ART	ADP-ribosyl transferase
ARTC	ART Cholera toxin-like
ARTD	ART Diphtheria toxin-like
ATP	adenosine triphosphate
Bn	benzyl
Boc	*tert*-butyl oxycarbonyl
Bu	butyl
Bz	benzoyl
CNE	cyanoethyl
COD	1,5-cyclooctadiene
Cp	cyclopentadiene
CSI	chlorosulfuryl *iso*-cyanate
Cy	cyclohexane
DBU	1,8-diazabicyclo(5.4.0)undec-7-ene
DCI	4,5-dicyanoimidazole
DCM	dichloromethane
dCPI	dichlorophosphoryl *iso*-cyanate
DDQ	2,3-dichloro-5,6-dicyano-1,4-benzoquinone
DIBAL-H	di-*iso*-butylaluminium hydride
DIPEA	*N*,*N*-di-*iso*-propylethylamine
DMAP	4-dimethylaminopyridine
DMF	dimethylformamide
DMP	Dess-Martin periodinane
DMV	double-membrane vesicle
DNA	deoxyribonucleic acid
EDCI	1-ethyl-3-(3-dimethylaminopropyl)carbodiimide
ER	endoplasmic reticulum
ERGIC	endoplasmic-reticulum–Golgi intermediate compartment
Et	ethyl
EVE	ethyl vinyl ether
Fm	9-fluorenylmethyl
Glc	glucose
HPLC	high-performance liquid chromatography
HTRF	homogenous time-resolved fluorescence
*i*Bu	*iso*-butyl
IBX	2-iodobenzoic acid
IC_{50}	half maximal inhibitory concentration
imid.	imidazole
*i*Pr	*iso*-propyl
IR	infrared
ITC	isothermal titration calorimetry

K_D	dissociation constant
LCMS	liquid chromatography mass spectrometry
LG	leaving group
Mac1	macrodomain 1
MAR	mono-ADP-ribose
*m*CPBA	*meta*-chloroperoxybenzoic acid
Me	methyl
MEK	methyl ethyl ketone
NAD^+	nicotinamide dinucleotide
Nam	nicotinamide
NMR	nuclear magnetic resonance
nsp	non-structural protein
Nuc	nucleophile
ORF	open reading frame
PAR	poly-ADP-ribose
PARG	PAR glycohydrolase
PC	oxyphosphatidyl carbamate
Ph	phenyl
PMB	*para*-methoxybenzyl
pp	polyprotein
PPTS	pyridinium *para*-toluenesulfonate
PTFAI	2,2,2-trifluoro-*N*-phenylacetimidoyl
PTM	post-translational modification
pyr.	pyridine
Rib	ribose
RNA	ribonucleic acid
RT	room temperature
RTC	replication and transcription complex
SARS-CoV-2	severe acute respiratory syndrome coronavirus 2
SC	oxysulfuryl carbamate
SEC	size exclusion chromatography
SUMO	small ubiquitin-like modifier
TBAI	tetra-*n*-butylammonium iodide
TBDPS	*tert*-butyldiphenylsilyl
TBS	*tert*-butyldimethylsilyl
*t*Bu	*tert*-butyl
TCBS	2,4,5-trichlorobenzoyl chloride
TES	triethylsilyl
Tf	triflyl
TFA	trifluoroacetic acid
THF	tetrahydrofuran
THT	tetrahydrothiophene
TIPDS	tetra-*iso*-propyldisiloxanyl
TIS	tri-*iso*-propyl silyl
TLC	thin-layer chromatography
TMS	trimethylsilyl
Tol.	toluene
Ts	tosyl
U	uracil *or* uridine
UDP	uridine diphosphate
UV	ultraviolet