## Supplementary Data

# An efficient route to N -alkylated 3,4-dihydroisoquinolinones with substituents at the 3-position 

Aoi Tazawa, ${ }^{\text {ab }}$ Junki Ando, ${ }^{\text {a }}$ Kohei Ishizawa, ${ }^{\text {a }}$ Isao Azumaya, ${ }^{\text {bb }}$ Hidemasa Hikawa ${ }^{\text {b }}$ and Minoru Tanaka,*a

*a Sohyaku Innovative Research Division, Mitsubishi Tanabe Pharma Corporation, 1000 Kamoshida-cho, Aoba-ku, Yokohama-shi, Kanagawa 227-0033, Japan

Tel: +81-45-963-7217; fax: +81-45-963-7247
E-mail address: tanaka.minoru@mw.mt-pharma.co.jp
${ }^{*}$ baculty of Pharmaceutical Sciences, Toho University, 2-2-1 Miyama, Funabashi, Chiba 274-8510, Japan
Tel: +81-47-472-1589; fax: +81-47-472-1595
E-mail address: isao.azumaya@phar.toho-u.ac.jp

## Table of Contents.

S2 General Information
S3-S11 NMR Spectra of compounds

General Information. ${ }^{1} \mathrm{H}$ and ${ }^{13} \mathrm{C}$ NMR spectra were recorded on a Bruker 400 ULTRASHIELD PLUS. ${ }^{1} \mathrm{H}$ and ${ }^{13} \mathrm{C}$ chemical shifts are reported in ppm downfield from tetramethylsilane (TMS, $\delta$ scale) with the solvent resonances as internal standards. The following abbreviations were used to explain the multiplicities: s, singlet; d, doublet; t, triplet; q, quartet; m, multiplet; band, several overlapping signals; br, broad. IR spectra were recorded on a PerkinElmer Spectrum One FT-IR Spectrometer using attenuated total reflection (ATR). Melting points (m.p.) were recorded on a BÜCHI Melting Point B-545. Mass spectra were provided at the DMPK Research Laboratory, Mitsubishi Tanabe Pharma Corporation.

N -(1-(2-Bromophenyl)-2-methylpropan-2-yl)formamide (7).



5-Bromo-2-(2-methoxy-2-oxoethyl)-3,3-dimethyl-3,4-dihydro-isoquinolin-2-ium bromide (9).



9

Methyl 2-(5-bromo-3,3-dimethyl-1-oxo-3,4-dihydroisoquino-lin-2(1H)-yl)acetate (10).





2-(5-Bromo-3,3-dimethyl-1-oxo-3,4-dihydroisoquinolin-2(1H)-yl)acetic acid (11).







5-Bromo-2,3,3-trimethyl-3,4-dihydroisoquinolin-2-ium iodide (12).




5-Bromo-2,3,3-trimethyl-3,4-dihydroisoquinolin-1(2H)-one (13).





2-Benzyl-5-bromo-3,3-dimethyl-3,4-dihydroisoquinolin-2-ium bromide (14).




14


2-Benzyl-5-bromo-3,3-dimethyl-3,4-dihydroisoquinolin-1(2H)-one (15).




1,2,3,4-tetrahydro-2-methyl-isoquinolinol intermediate(18).


