Study Synopsis

Title	Bioequivalence Study of Risperidone Tablets in Healthy Thai Male Volunteers
Sponsor	The Government Pharmaceutical Organization
Clinical laboratory	Naresuan University
Analytical laboratory	Bioequivalence Test Center, Faculty of Pharmaceutical Sciences, Naresuan University
EC approval	Institute for the Development of Human Research Protections (IHRP)
Principal investigator	Asst.Prof.Nantaka Khorana Department of Pharmaceutical Chemistry and Pharmacognosy Faculty of Pharmacy, Naresuan University
Co-investigator	Dr.Jran Sayastit, MD. Faculty of medicine, Naresuan University
Analytical investigator	Asst.Prof.Nantaka Khorana Department of Pharmaceutical Chemistry and Pharmacognosy Faculty of Pharmacy, Naresuan University
Pharmacokinetic and/or statistical investigator	Asst.Prof.Nantaka Khorana Department of Pharmaceutical Chemistry and Pharmacognosy Faculty of Pharmacy, Naresuan University
Objectives	To compare the rate and extent of absorption of generic product of Risperidone 2 mg tablet (Risperidone GPO®, The Government Pharmaceutical Organization) with the innovator product (Risperdal®, Janssen Pharmaceutical, Japan).
Study design	A randomized, two treatment, two-period, two sequence, single dose crossover design with two weeks wash out period in 23 healthy Thai male volunteers.
Test product	Risperidone 2 mg tablet (Risperidone GPO®), Lot no. S520154 Mfd. 30/03/09, Exp. 30/03/11 Manufactured by The Government Pharmaceutical Organization
Reference product	Risperdal® 2 mg tablet, Lot no. 846AHJ Mfd. -- , Exp. 09/11 Manufactured by Janssen Pharmaceutical, Japan

Study subjects	23 healthy Thai male volunteers with aging between 18-25 years
Demographic data	Age: 21.65 ± 0.78 year Height: 172.78 ± 5.72 cm Weight: 66.78 ± 7.46 kg BMI: 22.33 ± 1.80 kg/m^2
Admission and confinement	Prior to all dosing events, volunteers were fasted overnight at least 8 hours prior to study drug administration. On study day, a standardized lunch was provided 4 hours post-dose.
Drug administration	One 2 mg tablet of Risperidone was orally administered to all volunteers with water (240 mL) in the fasted state during 2 separate periods.
Study period	Period I: 1-5 Aug 2009 Period II: 15-19 Aug 2009
Washout period	Two weeks from the first drug administration
Safety assessment	All adverse events, physical examination, laboratory tests and vital signs were recorded and evaluated.
Blood sampling schedule	In each period, a total of 18 blood samples (6 mL each) were collected up to 96 hours post-dose. The total volume of blood draw was 216 mL for each subject.
Clinical sample storage	The resulting plasma was stored at -80ºC until anaylsis.
Bioanalytical methodology	Risperidone and 9-Hydroxyrisperidone (active metabolite) plasma concentrations were assayed using a validated HPLC-UV method.
Pharmacokinetic Parameters	Primary pharmacokinetic parameters (C_{max}, AUC_{0-t}, $AUC_{0-\infty}$) and secondary pharmacokinetic parameters (T_{max}, $t_{1/2}$) were determined from the plasma concentration data of analytes.
Confidence Intervals	90% CI for geometric mean of test/reference ratio (ln-transformed data) For Risperidone , C_{max}: 93.52–112.08% AUC_{0-t}: 82.45–112.41% $AUC_{0-\infty}$: 85.30–114.34% For 9-Hydroxyrisperidone , C_{max}: 90.48–100.70% AUC_{0-t}: 87.55–99.80% $AUC_{0-\infty}$: 87.90–100.30%

Conclusions	Since 90% confidence intervals for the parameters C_{max}, AUC_{0-t} and $AUC_{0-\infty}$ of both risperidone and 9-hydroxyrisperidone were within the bioequivalence range of 80-125%, it can be concluded that the Risperidone 2 mg tablet (Risperidone GPO®, Test formulation) is bioequivalent to Risperdal® 2 mg tablet (Reference formulation) under fasting condition.