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APPENDIX

Apparent bulk density, tapped density, and flowability study

Apparent bulk and tapped density were measured using cylindrical method modified from the USP 35 (145) and were determined as the following **Table A-1**.

Table A-1 Flow characteristics interpretation (145)

Compressibility Index (%)	Flowability	Hausner Ratio
≤10	Excellent	1.00-1.11
11-15	Good	1.12-1.18
16-20	Fair	1.19-1.25
21-25	Passable	1.26-1.34
26-31	Poor	1.35-1.45
32-37	Very poor	1.46-1.59
>38	Very, very poor	>1.60



VITA

Mr. Wittaya Nakachon was born on November 23rd, 1983 in Phangnga province, Thailand. He has earned a Bachelor's Degree in Pharmacy with a first class honor in 2007 from Faculty of Pharmacy, Mahidol University, Thailand. He started to work as a full-time hospital pharmacist at Phyathai 2 hospital for 2 years, and then he has worked as a part-time pharmacist at SAFE fertility center.

Poster and oral presentation

1. Poster presentation on the topic of "Dry powder by low energy process for nasal drug delivery" at The 7th Thailand Pharmacy Congress "Pharmacy Summit: Competency Integration toward AEC Regionalization in Pharmacy Profession", 1-2 November 2013 at Bangkok International Trade & Exhibition Centre (BITEC), Bangkok, Thailand

2. Oral presentation on the topic of "Nasal dry powder formulation for protein delivery systems" at The Asian Federation for Pharmaceutical Sciences Conference 2013 (AFPS 2013) "Advances in Pharmaceutical Sciences and Technologies – Next Generation Pharmaceuticals", 20-22 November 2013 at Ramada Plaza Jeju, Republic of Korea

3. Poster presentation on the topic of "Novel technique for dry powder development for intranasal delivery" at The 30th Annual Research Conference in Pharmaceutical Sciences, 10-12 January 2014 at Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand

Award

Nagai-Shukri Award 2013 at The Asian Federation for Pharmaceutical Sciences Conference 2013 (AFPS 2013) "Advances in Pharmaceutical Sciences and Technologies – Next Generation Pharmaceuticals", 20-22 November 2013 at Ramada Plaza Jeju, Republic of Korea