

## LIST OF ABBREVIATIONS

|        |  |
|--------|--|
| A2M8   | Acetonitrile : methanol (2:8 v/v)  |
| ACN    | Acetonitrile   |
| AED    | Animal equivalent dose   |
| ANFF   | Axial needle fracture force  |
| ANOVA  | Analysis of Variance   |
| AUC    | Area under the plasma concentration versus time curve                          |
| CMA    | Critical material attributes   |
| Cmax   | Peak Plasma Concentration  |
| CPCSEA | Committee for the Purpose of Control and Supervision of Experiments on Animals |
| CPP    | Critical process parameters  |
| CQA    | Critical quality attributes  |
| DE     | Drug entrapment  |
| DMEM   | Dulbecco's modified eagle medium   |
| DMSO   | Dimethylsulfoxide  |
| DoE    | Design of Experiment   |
| DS     | Design space   |
| DSC    | Differential Scanning Calorimetry  |
| E3DW7  | Ethanol : Distilled water (3:7 v/v)  |
| FBS    | Fetal bovine serum   |
| FITC   | Fluorosceine isothiocyanate  |
| FTIR   | Fourier Transform Infrared spectroscopy  |
| HPLC   | High Performance Liquid Chromatography   |
| IAEC   | Institutional Animal Ethics Committee  |
| ICH    | International Council on Harmonization   |
| IUPAC  | International Union of Pure and Applied Chemistry                              |
| LOD    | Limit of Detection   |
| LOQ    | Limit of Quantification  |
| MNP    | Microneedle Patch  |
| MP     | Melting Point  |
| MRT    | Mean Residence Time  |
| MTT    | (Dimethylthiazol-2-yl) 2,5-diphenyl-tetrazolium bromide                        |
| MW     | Molecular weight   |
| NPT    | Noopept  |
| P188   | Poloxamer 188  |
| P90G   | Phospholipon 90G   |
| P90H   | Phospholipon 90H   |
| PAT    | Process analytical techniques  |
| PBS    | Phosphate Buffer Saline  |
| PD     | Pharmacodynamic  |
| PDI    | Polydispersity Index   |
| PDMS   | Poly-dimethylsiloxane  |
| PK     | Pharmacokinetic  |
| PLGA   | Poly (lactic-co-glycolic acid)   |
| PNP    | Polymeric nanoparticles  |
| PS     | Particle size  |
| PTA    | Phosphotungstic acid   |
| PVA    | Poly vinyl alcohol   |
| PVP    | Poly vinyl pyrrolidone   |
| QbD    | Quality by Design  |
| QTPP   | Quality target product profile   |
| RH     | Relative Humidity  |
| RSM    | Response Surface methodology   |
| RT     | Retention time   |
| SD     | Standard deviation   |

|                  |                                   |
|------------------|-----------------------------------|
| SDC              | Sodium deoxycholate               |
| SEM              | Scanning electron microscopy      |
| SS               | Steady state                      |
| t <sub>1/2</sub> | Half life                         |
| TEM              | Transmission Electron Microscopy  |
| t <sub>max</sub> | Time at peak plasma concentration |
| UDL              | Ultradeformable liposomes         |
| VD               | Vascular dementia                 |
| VPN              | Vinpocetine                       |
| VS               | Vesicle Size                      |
| λ <sub>max</sub> | Absorption maxima                 |